

Issue 207

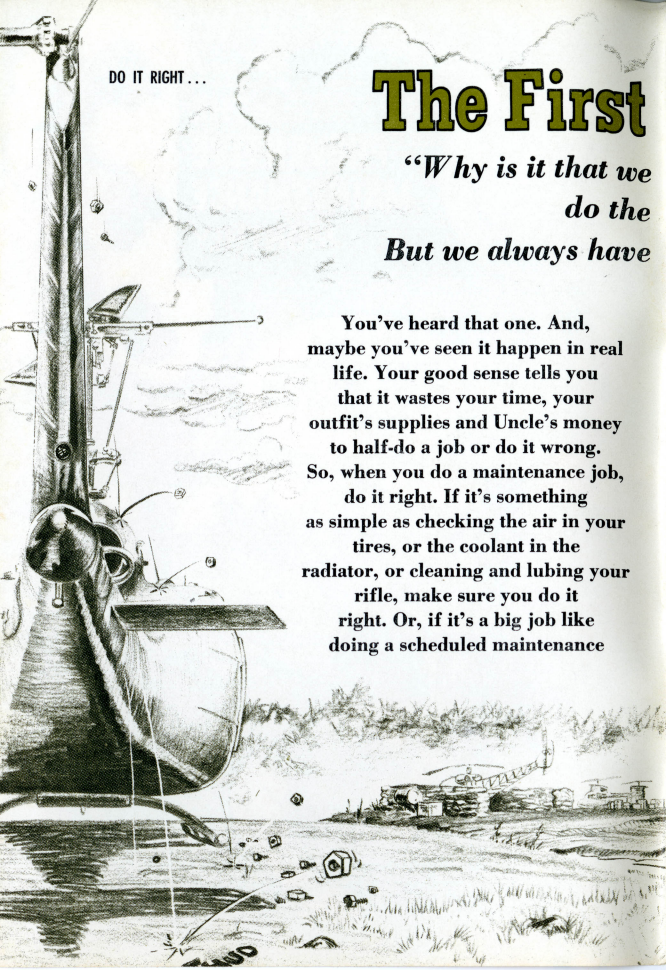
PS

1970 Series
February

THE PREVENTIVE MAINTENANCE MONTHLY

HEY, TIGER!!
THEM AIN'T INCOMING
ROUNDS... YOU BETTER
CHECK THE PM ON YOUR
SIGHTUNIT.





DO IT RIGHT...

The First

*“Why is it that we
do the
But we always have*

You’ve heard that one. And, maybe you’ve seen it happen in real life. Your good sense tells you that it wastes your time, your outfit’s supplies and Uncle’s money to half-do a job or do it wrong. So, when you do a maintenance job, do it right. If it’s something as simple as checking the air in your tires, or the coolant in the radiator, or cleaning and lubing your rifle, make sure you do it right. Or, if it’s a big job like doing a scheduled maintenance

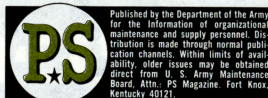
DO IT RIGHT...

The First Time

*"Why is it that we
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But we always have
never have time to
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time to do it over?"*

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service on your SP artillery, do it right. If maintenance is done wrong, it could lead to damaged or destroyed equipment. It could even mean the enemy gets you instead of you him. Wrong maintenance is serious. Some people have a name for doing the job right — Zero Defects. It's just another way of saying: Do your maintenance job right — the first time.



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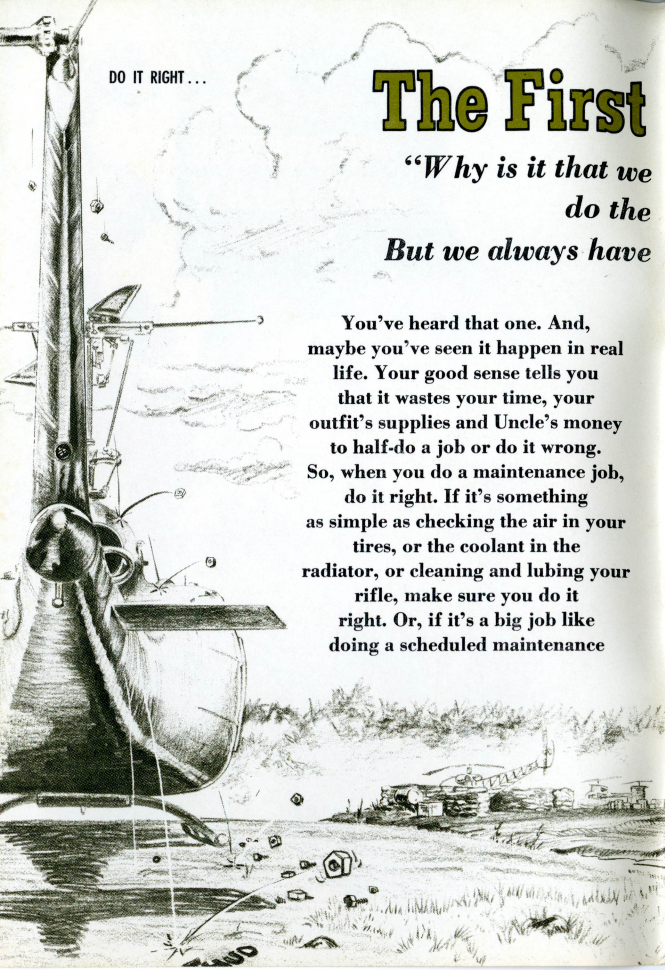
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PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

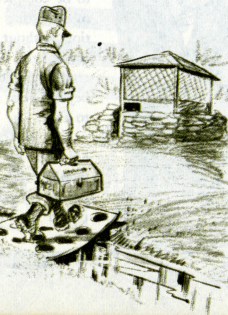
Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121



Time

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BE YOUR OWN INSPECTOR...

81-MM AND

HERE'S A
GUIDE TO
BEAT THE
INSPECTOR.

Look your mortars over with a hairy eyeball before the inspectors come around. They can't gig you for a fault if you find it and fix it before they see it.

The name of the game is the same whether your stovepipe is an 81-MM or a 4-Deuce.

Make sure everything is Present and Secure like the handy-dandy PS sign — **PS** — reminds you. To be present and secure — **PS** — an item has to be complete and in operating condition without being loose, bent, broken, cracked or worn out beyond your ability to fix it.

The pencil and clipboard boys won't give you any points for spit and polish so save that



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4.2-IN MORTARS

for your shoes. Painting over rust makes 'em downright hostile and painting (instead of oiling) surfaces where metal contacts metal, is a sure gig.

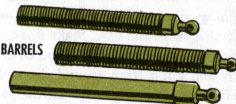
81-MM MORTAR

There's a lot more to the 81-MM mortar than meets the eye. F'rinstance, you could have any one of over 2 dozen different kinds depending on the combination of baseplate, barrel and mount.

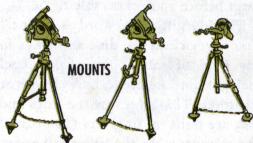
BASEPLATES



BARRELS



MOUNTS



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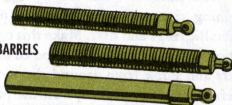
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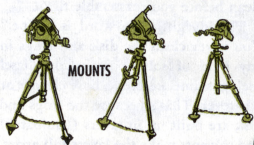
BASEPLATES



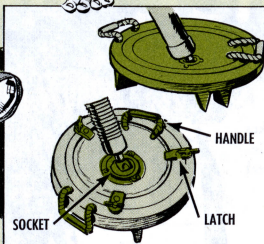
BARRELS



MOUNTS



Here's how the inspectors check out an 81-MM mortar baseplate:

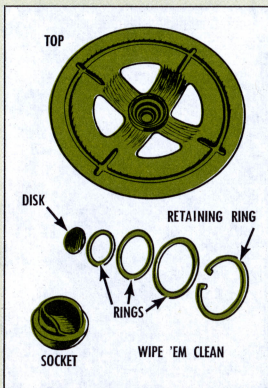


M23 BASEPLATE — Same as M23A1 baseplate except no latches.

M23A1 BASEPLATE — All 3 latches **PS** Carrying handles **PS** (Check both top and bottom of baseplate before you decide your handles are OK.) Socket not burred or rough. (Smooth it if needed.) Inner ring socket cap turns freely in complete circle without binding. If it sticks, loosen holding screws and get out the paint, dirt, or whatever is making it stick.

Get a new baseplate if inner and outer rings are bent so they don't fit together easily.

FEET PS (This means Present and Secure, not missing, broken, cracked or bent. If you can't get 'em in shape with welding and/or hammering, turn your baseplate in to your support.) No rust or bare spots. (Complete painting of baseplate is permitted.)

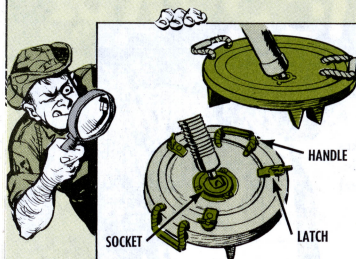


M3 BASEPLATE — Check carefully for cracks in metal and have 'em welded. This aluminum baseplate is light and handy but bends easily, so dig it in before firing if you are on rocks or frozen ground.

With pliers or other tool remove retaining ring and take out the 3 non-metallic rings and disk. Make this operation as clean as possible. Wipe all dust, dirt and gunk from around the socket before you start and wipe all the parts clean before you reassemble them.

That's right! The word is "wipe." You never clean the disk and rings in any kind of solvent including diesel fuel, gasoline, kerosene, bore cleaner or whatever. That's because the rings and disk are built up in layers (laminated) and solvents make the layers fall apart.

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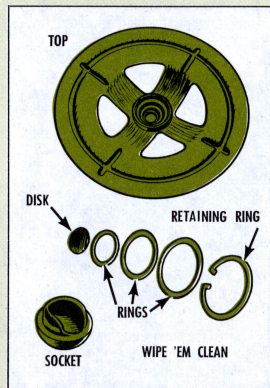


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If these parts are already in bad shape, order a new set as FSN 1015-247-7177. This is important because with worn-out rings and disk your M3 baseplate is more likely to bend or break. Put a light coat of clean GAA grease into the baseplate socket and on the rings, disk and ball socket when you reassemble the parts, and be careful not to get any dust or dirt on the parts. Make sure the ball socket and retaining ring are firmly seated and the socket moves freely.

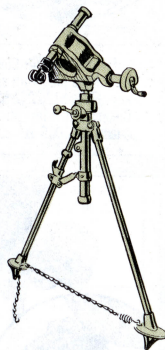
81-MM MORTAR MOUNTS



DOVETAIL
SOCKET



LEVEL VIAL



Feet, Chain **PS** complete with hook and spring. On the M23 mount, leg adjustment is with turnbuckle and turnbuckle clamp. On M23A1 mount, adjusting nut and locking sleeve are used. Level vial no longer required so no gig if it's busted. (Late model mounts are made without the vial.) Dovetailed socket not nicked, bent or burred. Traversing handwheel turns smoothly without binding or too much backlash. Traversing crank stays in place whether put in working or stowed position. Traversing spindle assembly not burred, nicked, does not bind. Elevating mechanism moves without binding or much backlash.

Shock absorber spring strong. (Push down on mount to test. Get support to put in a new spring if it's weak.)



Clevis pin **PS** with clip, chain and ring.



AFTER YOU CLEAN
IT PUT ON GAA...
A **LIGHT** COAT!



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81-MM MORTAR MOUNTS



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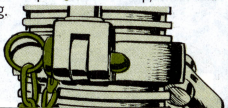
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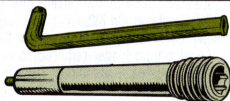


BARRELS

Not dented or out of round. Inside of barrel clean, lightly lubed, no puddle of oil, dirt or powder fouling in bottom of barrel.

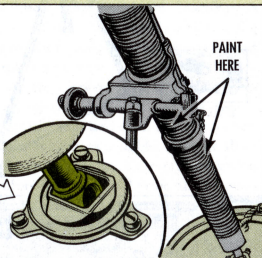
Pits $\frac{3}{8}$ -in long or wide or as much as .010-in deep are OK but if bigger you need a new barrel. Ask support to check. They can now requisition the M29E1 barrel under FSN 1015-722-5535 (8766-507).

Barrel is unserviceable if the end of tube shows too much spot wear, peening or cracks. (This causes poor obturation — gas escapes out the end of the tube before the round leaves.)



FIRING PIN (Clean by unscrewing from base plug with socket head screw key FSN 5120-240-5274 (41-W-2455). Clean vent with small arms cleaning brush FSN 1005-610-8828 (M6-6108828).

BARREL M29 — Barrel ring moves smoothly through entire range (the last 21 inches of barrel). Barrel threads not crushed throughout working area. (In non-working area it makes no difference.) White paint on markers 17 and 21 inches from barrel end not chipped or cracked. Base plug not bent. Rounded knob (spherical projection) turns easily in mortar socket.

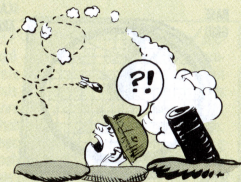


BARREL M29E1 — Same as M29 issued without the 17 and 21 markers painted white — so paint 'em.

BASIC ISSUE ITEMS

Basic issue items for the 81-MM mortar are listed in Appendix III to Ch 4 (Jun 67) to TM 9-3064 (Aug 57). Basic issue items for the 4.2 mortar are listed on pages B-4 to B-27 in TM 9-1015-215-12 (Jul 66).

FUSE SETTERS — Whatever kind you have (M14, M18, M25, M27, M34, M35) make sure it's serviceable.



M68 INERT ROUND — (For 81-MM mortar) — Paint not flaked, fins not bent.



81-MM



4.2-MM



M6 CLEANING BRUSH — Serviceable. FSN 1005-610-8828 for a new one.



CHECK YOUR TM'S
FOR MORTAR
BILL'S.



AIMING POST M1A2 — All 4 pieces **PS** with red and white paint in good shape. It's not a gig if pieces are pounded so much on the ends you couldn't fit 'em together. Canvas cover M401 not ripped, dirty or mildewed. Snaps **PS**.



GUN MUZZLE COVER — **PS** (There are several kinds, both leather and canvas.)



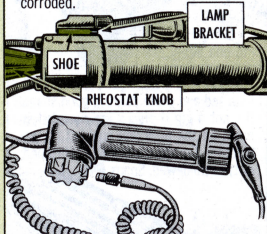
M3 SHOULDER PAD — Straps and buckles. **PS**, canvas not dirty.



CASES FOR LIGHTS AND SIGHTS

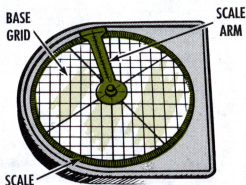
Check out according to the particular sight and other equipment you have. (M166 case for M53 sightunit or M78 case for M34 sightunit.) Hinges, fasteners and handles **PS**?

INSTRUMENT LIGHTS—All parts **PS**, wires not exposed, lamp bracket not burred, fits band assembly shoe. Rheostat knob works. Metal inside case not corroded.



(Note: Never leave batteries in instrument lights or aiming post lights when you store 'em. Forgetting to take out the batteries is the biggest cause of battery case corrosion—and a sure gig from the inspectors.)

M16 PLOTTING BOARD—All parts (base grid, azimuth scale, and scale arm) **PS**, clean and dry. Pivot point lightly lubed. (Clean plastic parts of board with optical lens cleaning compound—FSN 7920-132-7772 for 1 qt—never with gasoline, lighter fluid, dry cleaning solvent, alcohol, acetone, etc.) Art gum eraser or a damp cloth can be used. Use only a sharp, soft (#1 or #2) pencil for plotting. Never use grease pencil, ball point pen, map pins or anything sharp.



M105 CARRYING CASE—Metal snap fasteners **PS**, no holes or rips in case, stitching not torn. (To keep from bending the board, handle the case gentle-like and don't store anything on top of it.) TM 9-1220-204-15 (Jul 62) w/Ch 2 (Nov 63) present in pouch of case.



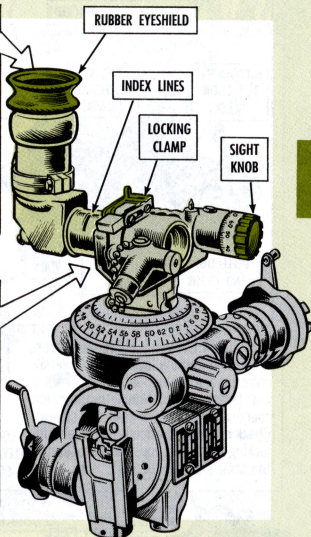
M53 SIGHTUNIT

ELBOW TELESCOPE M109 — Eyeshield

PS, rubber not torn. (Support can get you a new one — FSN 1240-892-5517.) Three-position index lines not painted over. Optical glass not dirty, smudged or fogged. Telescope moves freely through 180 degrees of arc. Lamp bracket holder complete with dust cover, screws and chain. Threads on both dust cover and lamp bracket holder not burred or stripped. Prism screw not loose or painted over. (Never remove this screw.)

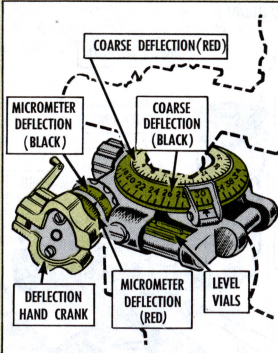
TELESCOPE MOUNT M128 — (Upper section)

Telescope locking clamp complete with retaining washers on both ends of both pins. (The locking clamp is more likely than anything else on the whole M53 sightunit to give you trouble. Check it often because the retaining washers tend to get lost; this lets the pins drop out.) Both front and rear parts of open sight **PS**. Micrometer angle of sight knob turns freely and elevates or depresses the telescope smoothly.



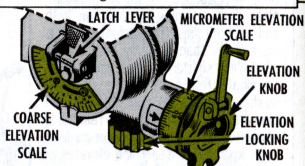
THE LIGHT PROJECTOR COVER IS A PROTECTIVE FEATURE AND SHOULD BE IN PLACE EVEN THOUGH THE LIGHT PROJECTOR IS NOT USED WITH EITHER MORTAR.

(Note: Neither coarse nor micrometer angle of sight scales are used with the 4.2 or 81-MM mortars.) Light projector not corroded in place, cover, chain and screws **PS**. The lamp is not used with the mortars so it won't matter if it's missing or burned out. Run angle of sight knob as far as it will go in either direction and look for rust in the area uncovered.



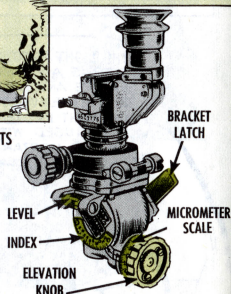
TELESCOPE MOUNT M128 — (Center section) — Numbers clear on all 4 deflection scales: 1. Coarse deflection (red); 2. Coarse deflection slip (black). 3. Micrometer deflection (red); 4. Micrometer deflection slip (black). Slip scales move freely without sticking when pressed down but stay in position when pressure is released. Both red and black micrometer scales turn equally and smoothly as deflection knob is moved. Deflection hand crank **P3** and stays in place when put in either working or stowed position. Elevation and cross-level vials not broken, cracked, vial cover **P3**. Deflection locking knob holds. Don't try to override it — (like you could if you forget it's on) — because that would likely strip some internal gears.

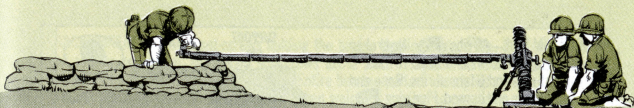
TELESCOPE MOUNT M128 — (Lower section) — Locking latch **P3**. Dovetail not nicked or burred. Data plates **P3**, not painted over. Numbers clear on coarse and micrometer elevation scales. Check out the elevation knob, crank and locking knob like you already checked the same parts on the deflection.



M34, M34A1, M34A2, M34A2C SIGHT UNITS

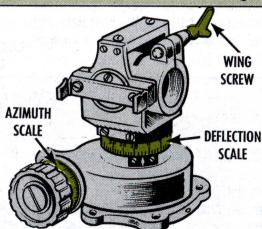
TELESCOPE MOUNT M79 — Elevation level **P3**, cover not frozen in place. Elevation scale and index readable. Elevation micrometer scale and index readable. Elevation knob turns freely and moves elevation scale. Mount bracket latch, spring and pin **P3**. Dovetail not nicked or burred.





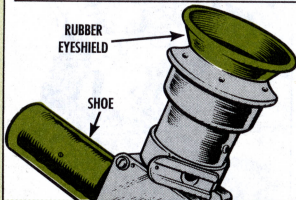
TELESCOPE ADAPTER — (M9 or M9A1)

— Screw locks telescope elbow in any position, screw wings not bent or broken. Open sight **PS**. Azimuth scale and index arrow readable. Deflection micrometer scale and index readable, scale turns with knob or (for adjustment) when center of knob is pressed in. Name plate **PS**, not painted over. Cross level **PS**, cover not frozen in place.



RUBBER
EYESHIELD

SHOE



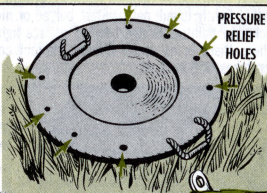
ELBOW TELESCOPE — (M62, M62A1C or M62A1D)

— EYESHIELD **PS**, rubber not torn. (If you need a new one ask your support to get it for you with FSN 1240-346-7676.) Index lines for left, right, and straight up position not painted over. Optical glass not dirty, smudged or fogged. Telescope moves freely through 180 degrees of arc. Band assembly shoe not nicked or burred.

4.2-IN MORTAR

M24A1 BASEPLATE

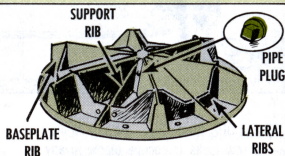
TOP SIDE — Paint without rust or bare spots. (Painting of baseplate permitted.) Carrying handles **PS**. Bearing surface that makes contact with rotator clean, not painted, rusted, scratched or burred. Covered with light coat of GAA. (The LO says GAA—**not** oil.) Eight pressure-relief holes open, not clogged with hardened mud. Well clean, without mud or crud. Circular groove for rotator lock slide not bent, filled with mud or pebbles.



WET
PAINT



BOTTOM SIDE—All ribs **P3**. No broken or loose welds on 6 baseplate ribs, 6 support ribs and 6 lateral ribs. Rope end knots secure and burned. Pipe end knots secure and burned. Pipe plug **P3**. (Unscrew it in an emergency to break the vacuum between the baseplate and the rotator but then screw it back in again.)

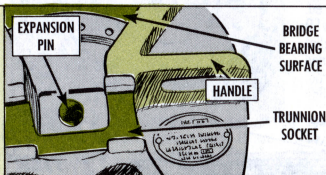


ROTATOR ASSEMBLY

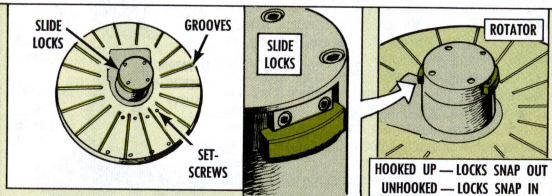
DIFFERENT MODELS—A cast magnesium model (P/N 8401603) and a steel model (P/N 7144246). With the steel model you often have to move the bridge about 45 degrees left or right before it seats completely. Handles of magnesium model will bend if too much force's used in loosening stuck rotator with tanker's bar. Check these points on the model you have. . . .



FRONT SURFACE—Handles not bent, broken, or pulled out at the welds. Bridge trunnion socket lightly lubed, not painted, burred or nicked. Expansion pin not frozen, mushroomed, nicked or painted. Bridge bearing surface lightly lubed, not nicked or burred. All surfaces where there is no metal-to-metal contact covered with paint without blisters, bubbles, scratches or thin spots.

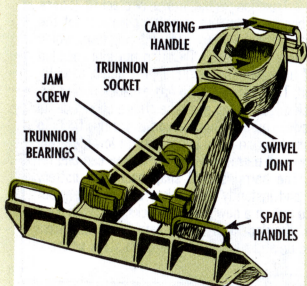


BACK SURFACE — All 9 set-screws holding the bridge bearing plate **PS**. Four set-screws on rotator projection **PS**. Two set-screws above each rotator slide lock **PS**. Grooves clean, not clogged with grease or dirt. Entire bearing surface clean, lightly lubed. Rotator slide locks move into extended position when weight is applied to expansion pin. (To check this make a Badalato inspection: 1. With bridge and rotator both upside down, join bridge and rotator. Both rotator slide locks will snap into the extended position if equipment is working right. 2. Unhook rotator from bridge. If equipment is working right the rotator slide locks will snap back into the slide housing. Unless your rotator slide locks pass both parts of the Badalato* inspection, turn your rotator in to support.)



BRIDGE ASSEMBLY

You never cross a bridge before you come to it, not even the bridge on your 4.2 mortar. You should check it, tho, and here's how...



TOP SIDE — Spade handles not mashed, broken. Trunnion bearings and trunnion socket smooth, lightly lubed, not burred or painted. Washer, nut, and jam screw **PS**. Body carrying handle complete with carrying sleeve, cross brace **PS**. Recoil springs OK.

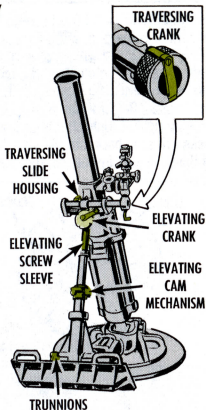
BOTH SIDES — All surfaces except bearing areas painted without blisters, rust or bare spots. Body not cracked or bent.

BOTTOM SIDE — All segments of spade not bent, broken, or with loose welds. Body turns smoothly through entire circle at swivel joint.

*Devised by Sgt Badalato

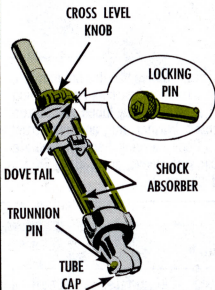
STANDARD ASSEMBLY

Trunnions not bent, painted or burred, lightly lubed. All 3 ears on elevating cam mechanism **PS**. Elevating cam not frozen, locks in both high and low elevation automatically. (If it won't lock automatically, you can pass inspection if you can lock it manually. If it won't even lock manually, call your support.) Elevating screw sleeve not bent, rusted, painted or burred, lightly lubed, raises and lowers evenly without binding or skipping. All parts of crank and handle **PS**. Recoil and counter-recoil springs not worn out. (Push standard straight down as far as it will go and then release. If springs are OK the standard will snap back into its previous position.) Traversing mechanism wheel, crank and crank handle **PS**. Crank will stay securely where it is put in either the operating or stowed position. Not more than ¼-turn free play in traversing mechanism wheel. Traverse operates smoothly without binding or skipping through entire range of travel. Traversing slide housing does not turn in a circular motion when it is moved from side to side. Slide housing not painted, bent or burred, lightly lubed. Traversing slide body lightly lubed, not bent, painted or burred.



BARREL ASSEMBLY

OUTSIDE — Trunnion pin not broken or cracked. (Check carefully because a broken trunnion pin could let the barrel jump out of the bridge socket during firing which would be very dangerous.) Trunnion pin and rounded bottom of tube cap not painted, lightly lubed, smooth, not burred. Tube cap tight, no gas escapes during firing. (Check edges of cap and tube. There should be no sign of powder burns.) Shock absorber springs OK? (To test, crank elevation up to upper limit of low elevation range. Now pull barrel down as far as you can and let go of it. The barrel should snap back into battery smoothly and instantly. If it takes too long get your support to put on a new pair of shocks. Barrel locking pin **PS**. Knurled knob moves latch smoothly from latched to unlatched position and latch stays where it is put.



DON'T TELL ME,
LET ME GUESS---
BROKEN TRUNNION PIN--
RIGHT!

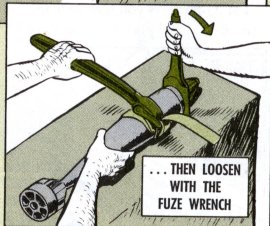
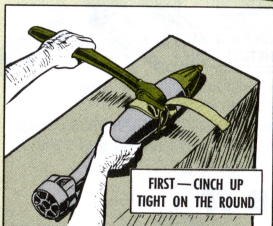


All non-bearing surfaces of mortar even painted without rust spots, scratches or blisters. Bearing surfaces **not** painted, smooth, rust free and lightly lubed. Sight mount handle (cross-level knob) not frozen, turns freely and moves sight socket smoothly and evenly without binding or skipping. Dovetail not nicked or burred, lightly oiled. Brass worm gear assembly not nicked or painted over.

INSIDE — Not dented or out-of-round. Clean and lightly lubed without powder fouling or oil puddled in the bottom of barrel. Pits $\frac{3}{16}$ -in long or wide or as much as .010-in deep are OK but you need a new barrel if they're bigger than that. If there's any doubt, ask your support to look it over. Your support gets 4.2 barrels under FSN 1015-857-2822.



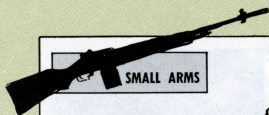
STRAP 'EM DOWN FIRST



That old strap style pipe wrench, FSN 5120-262-8491, is the best companion your M18 fuze wrench, FSN 4933-723-1161, ever had for help in changing fuzes on 81-MM rounds. But some anxious type mortarmen often forget to follow the A-B-C steps in Fig 42, Ch 4 (Jun 67) to TM 9-3064 (Aug 57).

For example, if you want to swap the M532 variable time (proximity) fuze for the point detonating super quick/delay fuze on some of your M374 high explosive rounds—your first move is to cinch up tight on the round itself with this pipe wrench. That way you'll be less tempted to violate the safety rule that says don't hammer on the fuze wrench to loosen the fuze from the round.

The pipe wrench is part of your mortar's basic issue.



SMALL ARMS

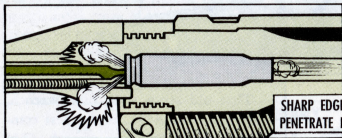
M14
HINTS

CHIPPED TIP?



No self-respecting armorer would care to have a scorched-faced powder-burned M14 rifleman accuse him of not inspecting his weapon's firing pin thoroughly.

Could happen, though, if an unnoticed sharp point on the firing pin's tip penetrated the primer of a round being fired. The resulting blowback through the rear of the cartridge case sure would make for one hot-under-the-helmet rifleman.



SHARP EDGE MAY
PENETRATE PRIMER



That's why it's important to follow the organizational maintenance instructions in Table 3-5 of TM 9-1005-223-20 (May 67).

But the only positive way to spot all those tiny pits, chips or burrs is through a magnifying glass . . . such as the FSN 6650-356-8405 listed on page 72 of SC 6645/50-IL (Jun 69).

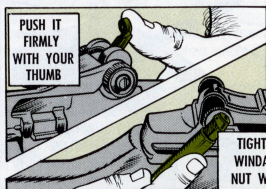
DON'T HEEL IT... **THUMB IT**

Banging the sight sharply with the heel of your hand is neither a kind nor a right way to check the tension on the M14's rear sight.

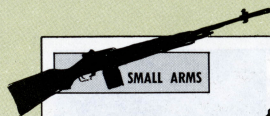
An easy, steady thumb pressure will do it . . . after you click the sight all the way out, then lower it back two clicks.

If the sight gives, turn the windage knob nut clockwise with the screwdriver blade of your combination tool. Just one click at a time—until the sight holds against your thumb's pressure.

FM 23-8 shows you how on pages 38 and 39—and explains how in para 27.



TIGHTEN
WINDAGE
NUT WITH
COMBO TOOL



SMALL ARMS

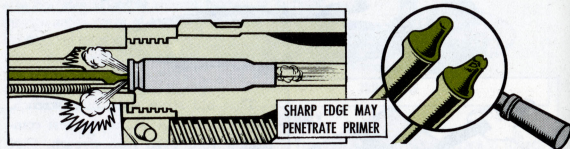
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M14 HINTS

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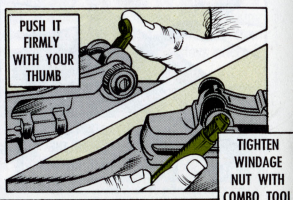
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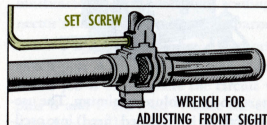


OVERHANGS ARE NO-GO

Dear Half-Mast,

Am I right in suspecting that the set screw in the M14 rifle's front sight is for windage correction?

CW3 J.E.D.



SET SCREW

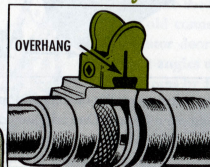
WRENCH FOR ADJUSTING FRONT SIGHT

Dear Mr. J.E.D.,

That's right, Sir! And there's a wrench (Key, socket head screw) in the Small Arms Repairman's Tool Kit for the unit armorer to use in adjusting the sight right or left.

Might mention, though, that any sight correction requiring the sight to overhang the sight base means the weapon needs to visit DS for treatment.

Half-Mast



OVERHANG



IF IT'S AN OVERHANG, SEND TO DS.

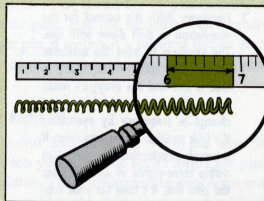


AHM FINE.

ARMORERS! ...

RECHECK THOSE .45 SPRINGS

You don't have to split fractions any more to measure short recoil springs on your .45-cal pistols. Anywhere between 6" and 6 7/8" is "go" ... according



to Ch 1 (Jun 69), TM-9-1005-211-12 (Sep 68).

The same change points out that a missing detent on the recoil spring plug does not make the weapon unserviceable.

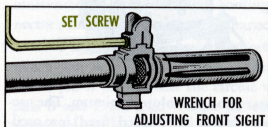
In general, consider the weapon serviceable as long as the spring's not too short and there are no weak spots in any of the coils. Check the TM change yourself for the details.

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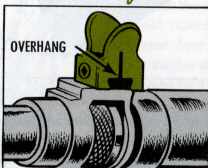


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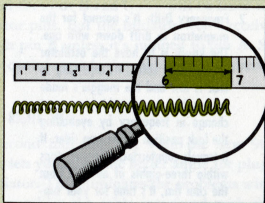
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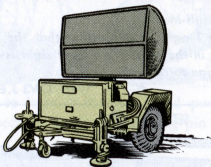
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HAWK

STRETCH THE GOOD LIFE

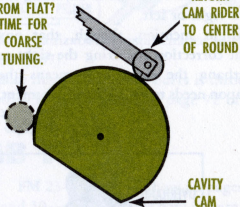
The good life of your Hawk's AN/MPQ-34 acquisition radar's modular oscillator can go on and on if you apply a little know-how needed for the long haul. To get the most out of that oscillator a smart cookie'll play it cool on these points:



1. **Magnetron Starts:** Limit its current starts to an absolute minimum. The useful life of the maggie depends on the number of times it's shocked (fired) into oscillation—the fewer starts the better. To extend its life make it a habit to remove the magnetron filament and high-voltage fuses when you place the radar in false radiate, or when it's to be left in a standby condition longer than five minutes.

2. **Frequency Drift:** It's normal for the magnetron to drift down with age. The knack is to have the oscillator coarse tuned before its capability to lock is lost and the maggie's made useless. You can spot this permanent change in frequency by eyeballing the lock position of the cam rider. If it travels counterclockwise and stops within three-eighths of an inch from the cam flat, it's time for your support to coarse tune it. The lock position should be returned to the center of the round portion of the cam.

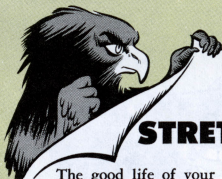
STOPS $\frac{3}{8}$ "
FROM FLAT?
TIME FOR
COARSE
TUNING.



RETURN
CAM RIDER
TO CENTER
OF ROUND

CAVITY
CAM

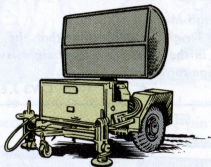
3. **Handling:** Shock, vibration and exposure to metallic objects and magnetic areas reduce the field strength of the magnetron's magnets. One adjustment of the cavity with a steel tool will degauss the magnets enough to cause the pushing figure to double or result in moding. So-o-o-o, when doing any work with or around the modulator oscillator never use steel tools, never place the unit on or near steel objects like a work bench, cabinet, wall, etc., and never let it get any closer than six inches to other magnetic areas or materials. Always store and ship the unit in its container (Drum, metal, FSN 8140-887-9002).



HAWK NOTES

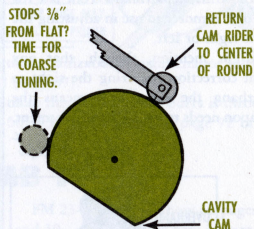
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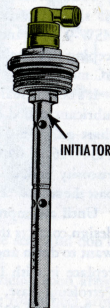
SHORT YOUR PINS

That new 90-degree igniter connector (FSN 5935-854-3079) on the rocket motor initiator of your Hawk missile just may have a small—but critical—wire missing that can guarantee a costly misfire.

No sweat if your continuity check with the AN/PSM-6 multimeter shows a resistance reading. That means your connector's installed right in wiring harness FSN 1420-767-4137.

But a zero reading means the shorting wire is missing between pins A and B on the back side of the connector. This wire's job is to complete the circuit with the initiator when pins B and C are used—since the cable leads are only connected to pins A and C. If that jumper wire's missing, have your maintenance support check Fig 70 of Ch 3 (9 Jan 68) to TM 9-1410-500-34/2 (23 Oct 64).

90° CONNECTOR



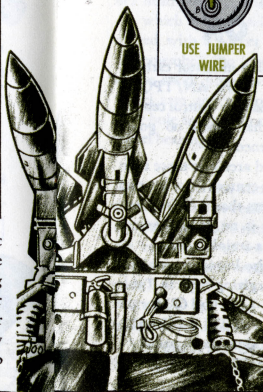
Depending on the indexing slot you select, either connector pins A and C . . . or B and C . . . will be lined up with the 2 initiator pins. But the initiator won't receive any juice through pin B unless it's jumped to pin A. So the rocket motor can't fire and your countdown sequence ends right now.

CHOOSE THE RIGHT SLOT

Adding the second indexing slot with the new 90-degree connector lets you select the better angle for plugging into the initiator. This eliminates the problems with the old connector, where the cable interfered with the initiator door. Repeated door closings bent the cable at right angles until it broke the cable and spread the initiator pins by forcing the connector to lean.



Besides leading the cable in at a right angle—which clears the initiator door—the new connector has deeper sockets for better metal to metal contact.



NOTES

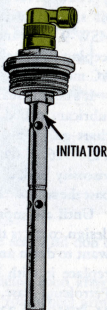
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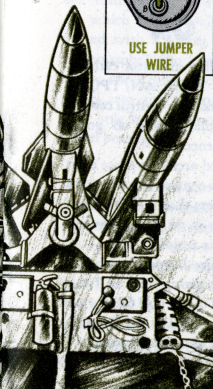
NEW
CONNECTOR



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CONNECTOR



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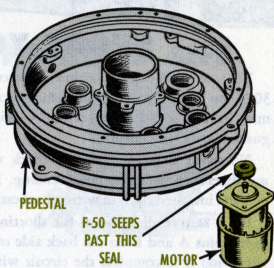
YOUR OIL MAY BE SEEPING

You'd never suspect it, but that F-50 oil sitting inside your Hawk's AN/MSW-9 PCP antenna pedestal may be seeping past the seal for your antenna's AC motor.

It's not the seal's fault . . . it's the F-50 lubricant called for in the lubrication chart on page 4-2, Fig 4-1, in TM 9-1430-516-12 (Aug 68). The F-50's low viscosity makes it thin enough to seep past the seal.

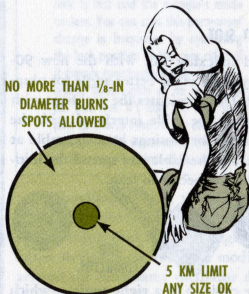
Until an improved antenna pedestal design corrects the problem, you might want to drain and flush the F-50—and replace it with Lubricating Oil, Gear, Petroleum Base, MIL-L-6086-B, Grade M. FSN 9150-223-4130 will supply you a 1-gal can.

This is just a fix for anyone with this problem. If you need to replace the



lube, be sure to use some Freon TF to flush that F-50 residue from the pedestal. DS can order a 60-lb drum of the freon under FSN 6830-082-2411, MSFCS SPEC 237A or equal. It's listed under Item 263, page 63, TM 9-4935-501-15P/1 (Sep 67).

SOME BURN SPOTS OK



Burn spots on the plan indicator cathode ray tube inside your Hawk AN/TPQ-21 simulator station and battery control central don't always mean that tube's no good. Depends where it's burned.

It's OK if the burned area's no more than 5 KM from the CRT's center . . . or beyond the 5 KM limit, but less than 1/8-in diameter. Anything larger is no good—except for classroom or other training uses.

Best way to minimize burning problems is to follow the de-energizing steps in Table 2-5 of TM 9-1430-501-12/1 (Jul 67) for the BBC . . . and in Table 5 of TM 9-1430-512-12/2 (Jul 64) for the simulator station.

But an air bubble at the CRT center is something else. That means you've got a weak spot in the glass. Trade tubes.

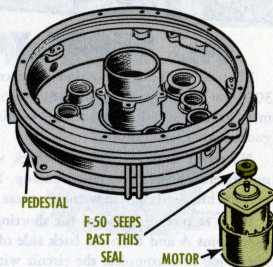
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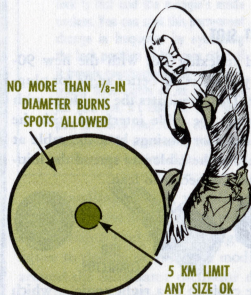
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HAWK HINTS

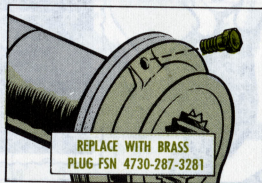


The perfect corrosion combination is a Hawk site next to the sea. And don't think your XM501E2 and E3 loader-transporters don't feel it, too.

Your loader's suspension system starts hurting for lube servicing soon after the relentless attack of rust succeeds in freezing the plugs to the roadwheel arm bearing assemblies. One or 2 attempts to break the plugs loose rounds 'em off to the point where they have to be drilled out.

The solution is to substitute a brass hex head plug . . . FSN 4730-287-3281 . . . which will not seize and can be removed with a socket wrench.

Remember, the lube level should be at the check plug level on each road-wheel arm and up to the level of the plug hole in the hub caps for the road-wheel bearings.



CHECK LOOSE BOLTS

Loose bolts can also cause trouble in the suspension system. Wear marks and discoloration between the track pins and links are good visual clues. Or you can tap the track bolts sitting over the middle roadwheel to see if you get any jiggle from the wedge nuts holding them.

Replace the worn bolt link or retainer as required.

You might also check for loose bolts in the final drive U-joints. Torque 'em to 100-150 lb-in.

HAWK HINTS

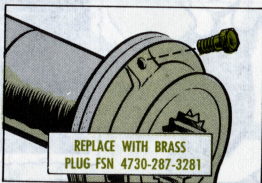


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TROUBLE IN YOUR PCV?

PUH-LEEZE

CHOK!

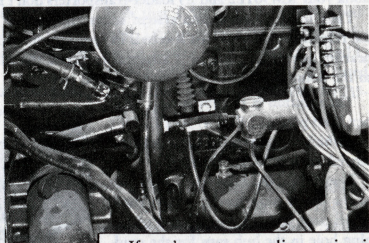
GASP

GO AHEAD—
TRY 'N' PUT YOUR
FINGER ON THE
PCV VALVE.

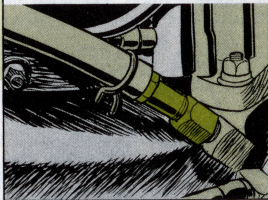
ON THE M715
1¼-TON TRUCK,
F'RINSTANCE!

Hey, Mr. Troubleshooter—quick, now—can you put your finger on your vehicle's PCV valve?

(Or maybe you call it a Donaldson valve—or metering valve—or ventilation control valve—or ventilator regulator.)



GIVE UP?? — WELL, LOOK
AGAIN... THERE IT IS!



If you've got a gasoline engine in your vehicle, you've probably got PCV—positive crankcase ventilation. You'll find PCV in all Army tactical wheeled vehicles that have gasoline engines. And it's in most gasoline-engine, commercial-design vehicles built in the past few years.

Your engine's PCV is controlled by a valve, a li'l bitty gadget with only one or two simple parts inside (dependin' on whether you've got the spring-loaded type or the vertical slide weight type).



TROUBLE IN YOUR PCV?

Puh-LEEZE

CHOKE!

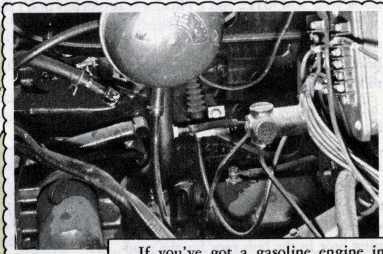
GASP

CLEAN VALVE!

GO AHEAD—
TRY 'N' PUT YOUR
FINGER ON THE
PCV VALVE...
ON THE M715
1¼-TON TRUCK,
F'INSTANCE!

Hey, Mr. Troubleshooter—quick, now—can you put your finger on your vehicle's PCV valve?

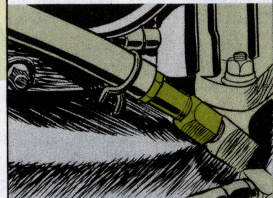
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GIVE UP??—WELL, LOOK
AGAIN... THERE IT IS!



A dirty PCV valve will cause all kinds of trouble in your engine. F'rinstance, Mr. Troubleshooter, are you tryin' to find the cause of:

—oil hogging?



—hard starting?



—spark plug fouling?



—sludge buildup in the crankcase?



—rough idle?



—missing at high speed?



—poor fuel mileage?



It's a good bet you've got a bum PCV valve. Either it needs cleaning or you need a new one.

Sooner or later, your PCV valve is bound to get fouled with crud vented from your crankcase. Your valve controls the amount of fumes, water vapor and other junk allowed into the PCV system. This stuff is sucked into your intake manifold and is burned along with the fuel-and-air mixture that runs your engine. That's "positive crankcase ventilation"—you've got the same thing on your own car if it's a fairly late model.

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Stuck OPEN, your PCV valve lets too much crankcase gas go through at idle speed. This upsets the fuel-air mixture fed by your carburetor.

Stuck CLOSED, your PCV valve lets fumes, water vapor and corrosive acids pile up in your crankcase. Sludge builds up. Varnish forms on moving parts. Acid and water attack bearings and other polished parts. Main bearing seals give out.

It's up to you to keep your PCV valve operating free 'n' easy. Your vehicle's -20 TM calls for cleaning your PCV valve at every S service. (Commercial vehicle manuals usually specify 6,000 miles.)

But this semiannual cleaning may not be enough—especially if your vehicle has to do a lot of idling or stop-and-go operation. And your PCV valve should be checked more often in cold-weather operations.

If you suspect your PCV valve is causing engine trouble, here's a quick 'n' easy way to see if it's workin' like it's s'posed to:

Take the hose off the inlet end of the valve. Then, with your engine running at idle speed, lay your finger lightly over the open end of the valve. You should feel suction. And you should notice a difference in the sound of your engine. If you don't, your PCV valve is probably plugged.

SUCTION?



A good, clean PCV valve should make a clicking sound when you shake it. This means the plunger is free. You also should poke a stiff wire in the inlet end of the valve and push the plunger to see if it'll go all the way toward the outlet end.

CLICK
CLICK



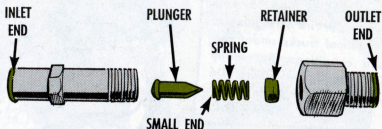
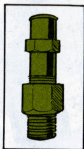
Maybe you need a new PCV valve, but try cleaning your old one before you chuck it out.

Some PCV valves come apart for cleaning. You use dry-cleaning solvent or mineral spirits paint thinner. Carburetor cleaner is good, too. And you may have to do a little brushing if the stuff is stubborn. Be careful, though, not to stretch or mangle the spring used in the spring-loaded type valve.

If your valve does not come apart for cleaning, just let 'er soak in the cleaner. Then swish it around to flush out the junk and give it a shot of compressed air in each end. Careful . . . use low pressure. Wear goggles for safety.



In a pinch, some valves of this type can be taken apart for cleaning. Stick a blunt rod in the inlet end of the valve. Give the rod a rap with a small hammer or stick of wood to drive the



retaining ring out of the other end. Then the plunger and spring will come out. When you're puttin' the valve back together, after cleaning, make sure the plunger and spring are positioned right. Use a stick of wood to tap the retaining ring back in — very carefully.

While you're cleaning your PCV valve, it's also a good idea to make sure the connecting hoses or tubes are clean inside. Check, too, for leaks—like breaks or loose connections.



MULTIFUEL TRUCKS...

FROZEN FUEL?



WOTTAYA MEAN FROZEN FUEL FILTERS?? FUEL DON'T FREEZE!



NO — BUT THE WATER IN YOUR FUEL WILL ... AND DID!

Nope, that's not frozen fuel blockin' up the fuel system in your multifuel engine truck. It's frozen water—ice!

That water you forgot to drain from your fuel filters has frozen solid. Fuel can't get through. You're goin' no place until you get those filters thawed out. You'll have to put your truck in a warm place for a while. Or, if you're in a hurry, use hot water to thaw your filters. F'rgoshsake, don't go usin' a torch to thaw out a fuel filter!

Now you've learned a lesson. It's more important to drain your fuel filters every day in cold weather than at any other time.

And don't forget to add alcohol to your fuel, per para 41, TM 9-207 w/Ch 1 (Feb 63). Diesel fuel systems get the alcohol treatment now, too, per USATACOM Msg 1-23033 (Jan 68).

FIRE EXTINGUISHER SETUP

Dear Half-Mast,
AR 385-55 (Sep 65) tells you to put fire extinguishers in tactical trucks under certain conditions. But many TM's don't say where. Do you have any inside dope?
SGM R.G.C.



Dear Sergeant R.G.C.

You must be referring to the 2 1/2-, 5- and 10-ton trucks. The spot to mount fire extinguishers on 'em is the lower right-hand firewall inside the cab—that's if your CO gives the go-ahead.

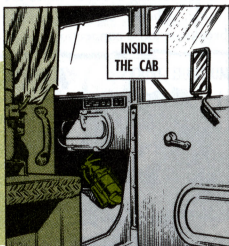
You'll find four knockout plugs on the firewall for an "old" extinguisher bracket, but with the latest standard extinguisher, FSN 4210-555-8837, you can use only 2 holes, maybe. If you run into trouble, start fresh. But mount in the same area.

Here's the spot for the 2 1/2-, 5- and 10-tonners . . . and the hardware you need.

4 Screws, machine, 1/4-inch, FSN 5305-988-1724 (MS-35206-280)

4 Washers, lock, FSN 5310-209-0786 (MS-35335-33)

4 Nuts, plain, FSN 5310-761-6882 (MS-51967-2)

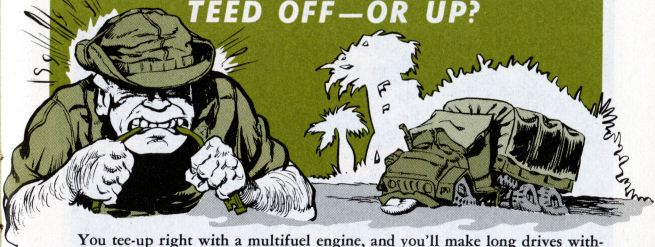


... BUT, LOOK FOR EXCEPTIONS LIKE THESE:



On other 1/4-, 3/4- and 1 1/4-ton trucks, you can get all the dope you need from the vehicle TM's.

TEE OFF—OR UP?



You tee-up right with a multifuel engine, and you'll make long drives without a hitch. If you don't, you'll blow your stack soon enough.

A multifuel truck can't stand a snafu on any fuel return tubing, FSN 4720-135-4424 or tee assembly, FSN 4730-226-1655.

A goof will show up fast in a new replacement.

Like in golf, you concentrate on a cool approach. Then, study your obstacles.

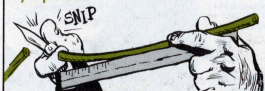
KEEP MUSCLE POWER DOWN—Most of your problems can come from too much tightening, especially in cold weather when the plastic tubing gets brittle.



DEPEND ON SKILL—Know your tee parts. See how the brass sleeve and tee nut fit around the tubes. Be sure you don't clog the injector nozzles with shavings.



MAKE A GOOD CUT—Your plastic tubing comes in bulk. Cut the exact length before you put it on.



CHECK YOUR FORM—Don't climb over the engine, stomping the tubing with your foot, or otherwise mess the tubes with tools.



This PM tee-up is bound to give you smooth sailing.



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 1 (Aug 69), TM's, TB's, etc.; DA Pam 310-6 (Jul 69), and Ch 1 (Oct 69), SC's and SM's; DA Pam 310-7 (Sep 69), MWO's and DA Pam 310-9 (Apr 68), COMSEC Pubs.

TECHNICAL MANUALS

TM 5-2805-260-14, 24P, Oct, Motor, Outboard, 40 HP.
TM 5-4310-232-20P, Sep, Comp, Recip, Air, 8 CFM, 175-PSI, Hand Truck Mtd.
TM 5-4310-335-20P, Sep, Compressor, Recip, Air, Whl Mtd, 4 CFM, 3000 PSI.
TM 5-4320-255-13, Sep, Pump Centrif, Pneu 210 GPM Fr water.
TM 5-4940-219-12, Aug, Shop Equip Gen Purp Repair, Semi-Trailer.
TM 5-6665-293-13, Sep, Org Mine Detector.
TM 5-6675-296-20P, Oct, Theodolite, Surveying.
TM 9-1005-249-12, C3, Oct, M16, M16A1, Rifles.
TM 9-1005-286-10, Nov, Gun, AA Towed: 20MM, XM167.
TM 9-1005-299-20P, Sep, Arm Sub-system 20MM Auto Gun: XM35 (AH-1G).
TM 9-1410-375-20P, Sep, Pershing.
TM 9-1425-375-15P, Sep, Pershing.
TM 9-1427-380-20P, Jul, Pershing.
TM 9-1430-254-15P/4, Sep, Imp Nike-Herc.
TM 9-1430-505-25P, Sep, Hawk Con-sole AN/TSW-4.
TM 9-1430-511-15P, Aug, Hawk Radar Set AN/MPQ-39.
TM 9-1440-250-25P/6/1, Sep, Imp Nike-Herc.
TM 9-1440-301-20P, Jul, Sergeant Launch Station.
TM 9-1440-585-12, Oct, Chaparral.

TM 9-2300-203-12, C7, Oct, M59 and M84 Carrier.
TM 9-2300-224-20, C13, Oct, M113, XM474E2, M577, M106, M132, Carriers.
TM 9-2300-378-20P/1, Aug, M60 and M60A1 Tanks.
TM 9-2320-224-10, C6, Jun, M114, M114A1 Carriers.
TM 9-2320-230-10, Jan, Truck, Cargo, 8x8, M656; Tractor, XM757; Van Expandable XM777.
TM 9-2350-300-10, C3, Oct, XM163 SP Antiaircraft Gun.
TM 9-4935-253-15P/2/2, Oct, Imp Nike-Herc.
TM 9-4935-425-15P, Sep, Redeye.
TM 9-4935-585-14/2, C1, Nov, Chaparral.
TM 10-5410-221-10, Aug, Expandable Shelter.
TM 11-5820-469-10, C6, Oct, AN/TRC-80 Radio Set.
TM 11-5820-690-15, Sep, R-1421/URR Radio Set.
TM 11-6625-212-15, Jul, Frequency Meters AN/USM-26 and AN/USM-26A.
TM 55-1520-224-10, Oct, OH-13.
TM 55-1520-224-20, Oct, OH-13.
TM 55-1520-224-20PMD, Oct, OH-13.
TM 55-1520-224-20PMI, Oct, OH-13.
TM 55-1520-225-20PMD, Oct, OH-13S.
TM 55-1520-225-20PMI, Oct, OH-13S.
TM 55-1520-225-20PMP, Oct, OH-13S.
TM 55-1520-226-20PMD, Oct, OH-13T.
TM 55-1520-226-20PMI, Oct, OH-13T.
TM 55-1520-226-20PMP, Oct, OH-13T.

ESC'S

TM 9-1090-204-ESC, Oct, Multirange Mount XM156.
TM 9-2320-208-ESC, May, M38A1, M38A1C, M381D, M170 1/4-ton trk.

TM 9-2320-210-ESC, May, Truck, Cargo: 2 1/2-ton M135, M211, M215, M217, M220, M222, M221.
TM 9-2320-213-ESC, Sep, Truck M274, M274A1.
TM 9-2350-215-ESC, Apr, M60/M60A1 Tanks.
TM 11-5820-398-ESC, May, AN/PRC-25 Radio.

MODIFICATION WORK ORDERS

9-1010-207-20/1, Oct, Arm Sub-system M5.
9-1430 251-30/38, Oct, Director Station AN/MSQ-91, AN/MSQ-93, AN/MSA-19D, and AN/MSQ-61A.
9-1440-250-30/5, C1, Nov, Imp Nike-Herc.
55-1510-202-20/6, Oct, O-1.
55-1520-209-30/91, Oct, CH-47.
55-1520-211-30/24, Sep, UH-1A-1B.
55-1520-211-30/25, Sep, UH-1A-1B.
55-1520-214-30/26, Oct, OH-6.
55-1520-217-30/40, Nov, CH-54.
55-1520-2221-30/17, Nov, AH-1G.
55-1520-221-30/30, Oct, AH-1G.
M715 and M725.
9-2320-244-20/1, Oct, 1 1/4-ton trk
9-2350-230-30/1, Nov, XM551.

MISCELLANEOUS

AR 746-10, Oct, Marking, Packing Supplies & Equipment.
LO 5-2805-260-12, Sep, Outboard Motor, 40 HP.
LO 5-3810-288-12-1, Sep, 12-2, 12-3 and 12-4 Crane-Shovel, Truck Mtd: 20 Ton.
LO 5-4310-277-12, Aug, Air Compressors, 15 CFM.
LO 9-1005-298-12, Sep, Arm Sub-system XM27E1.
LO 9-1005-299-12, Sep, Arm Sub-system, XM35 Subsystem (AH-1G).
LO 9-1440-585-12, Aug, Chaparral.
LO 9-4935-587-12, Aug, Shop AN/TSM-95 Chaparral.
TB 5-2800-221-15, Sep, Engine Application.

Sheridan

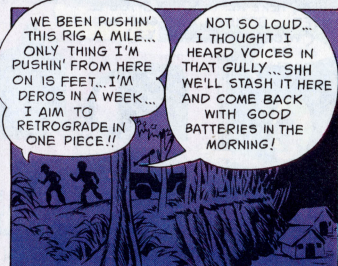
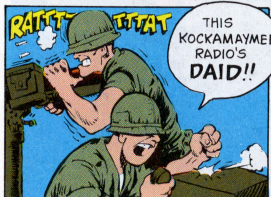
Some people who should know better have been calling the M551 Sheridan a "tank." You Sheridan crewmen and maintenance guys know it's an Armored Reconnaissance/Airborne Assault Vehicle . . . Sheridan for short. But 'taint a tank. Right!

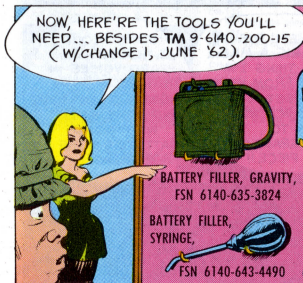
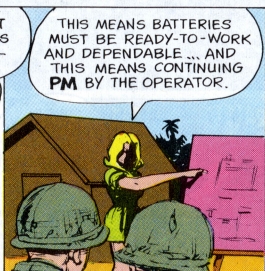
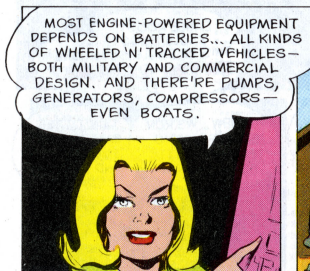
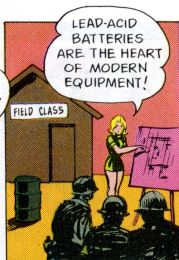
Color M79 Brown

Touch-up paint jobs on M79 grenade launcher plastic stocks should be done with the 16-oz aerosol you can get under FSN 8030-145-0042. It's Brown No. 30045. And it's available from US Army Mobility Equipment Command by using RIC A12.

**JOE'S
DOPE**

**LEAD-
ACID
BATTERIES**





BATTERY FILLER, GRAVITY,
FSN 6140-635-3824



BATTERY FILLER,
SYRINGE,
FSN 6140-643-4490



SCRUB BRUSH
(NO METAL BRISTLES)



SODIUM BICARBONATE
(BAKING SODA)
FSN 6810-264-6618 (1 LB.)
OR
FSN 6910-290-5574 (100 LBS)

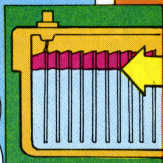


2 BOX OR
OPEN END WRENCHES
(NOT CRESCENT)

BEFORE OPERATIONS



REMOVE FILLER CAPS AND CHECK ALL CELLS. IF THE ELECTROLYTE IS BELOW THE PLATES...



...YOU ADD WATER TO ABOUT $\frac{3}{8}$ -IN. OVER PLATES. BE CAREFUL NOT TO OVERFLOW OR YOU'LL LOSE YOUR ELECTROLYTE



NEXT, CHECK ALL CONNECTIONS TO MAKE SURE THEY'RE TIGHT!



LIFT AND PRESS CABLE WITH JUST THUMB AND FINGER



YOUR CABLE TERMINAL WON'T LOOSEN SO EASY IF IT'S UNDER THE HEAD END OF THE BOLT.



TWIST CLAMP WITH THUMB AND FINGER ONLY



ALWAYS USE TWO WRENCHES TO TIGHTEN CLAMP AND CABLE HOOK-UPS.



IF THERE'S NO SPACE AT THE OPEN SIDE OF A TIGHT CLAMP, GET A NEW CLAMP



LOOSE IN THE SADDLE?? ...
TIGHTEN THE HOLDDOWNS ...

BUT...E-A-S-Y OR YOU'LL CRACK THE WALLS!!

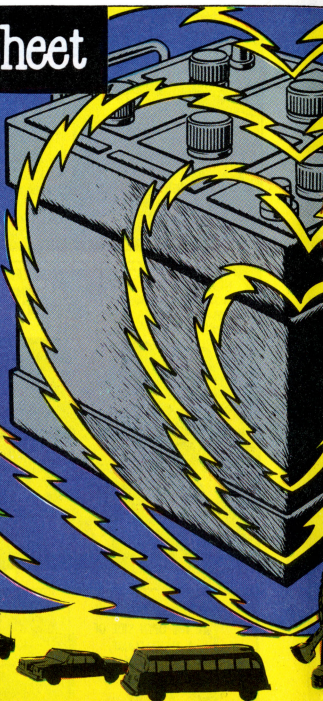
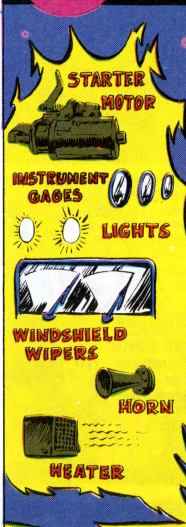


HERE'S A PIN-UP TO POST.





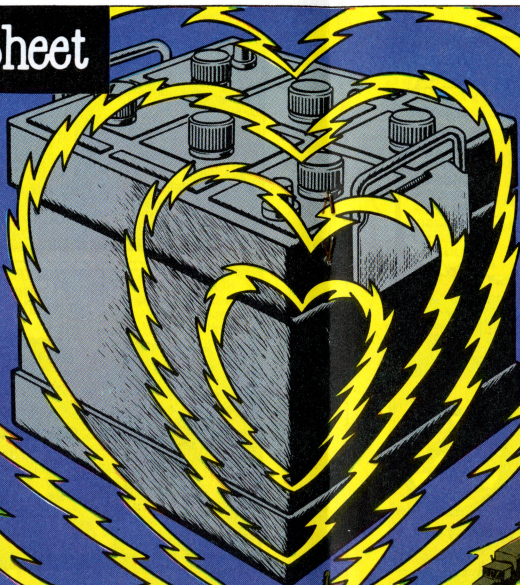
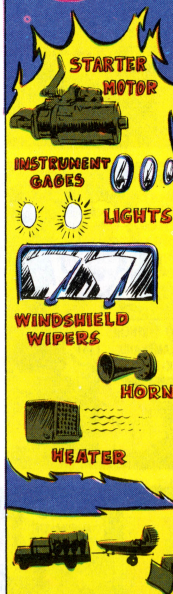
Dope Sheet



WE HAVE THE WORLD'S BEST EQ

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BUL

Joe's Dope Sheet



The battery is the heart of it all!
Powers equipment – the large and the small!!
But the operator must see it's PM'd constantly...
And it's kept at the ready – on call!!



WE HAVE THE WORLD'S BEST EQUIPMENT...*Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



EQUIPMENT... *Take care of it*

LETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

DURING OPERATIONS

KEEP YOUR EYE ON THE AMMETER—OR THE BATTERY GENERATOR INDICATOR... IT TELLS YOU HOW SHE'S PUTTING OUT FOR YOU!!

HIGH READINGS ON YOUR AMMETER OR BAT-GEN INDICATOR ARE SIGNS OF OVERCHARGING. THIS CAN KILL YOUR BATTERY. ANOTHER SIGN OF OVERCHARGING IS A HEAVY DEMAND FOR WATER. BETTER HAVE YOUR MECHANIC CHECK YOUR VOLTAGE REGULATOR.

AMMETER

DURING THE FIRST FEW MINUTES OF OPERATION ...



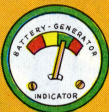
IT SHOULD SHOW A HIGH RATE OF CHARGE

BUT WITHIN 15 MINUTES IT SHOULD SHOW A DROP



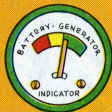
IF IT KEEPS SHOWING A HIGH RATE OF CHARGE, REPORT IT!!

BAT-GEN INDICATOR (2-TYPES)



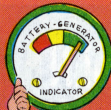
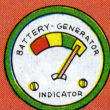
4 COLORED PANELS

NEEDLE SHOULD BE HERE DURING ENGINE OPERATION



3 COLORED PANELS

BUT... IF IT SHOWS THIS HIGH DURING ENGINE OPERATION, REPORT IT!



WEEKLY INSPECTION SERVICES

EVERY WEEK YOU MAKE THESE CHECKS



FRAYED CABLES??



REPORT EXPOSED WIRES!

REPORT CRACKS OR LEAKS!!



SEE IF HOLDDOWNS ARE TIGHT ENOUGH — OR IF THEY'RE TOO TIGHT SO THEY'RE MASHIN' YOUR BATTERY. REPORT BARE METAL OR CORRODED PARTS.



VENTS CLEAR?



NEVER PUT 'EM TO YOUR MOUTH — YOU'LL GET BURNED BY ACID. USE A WIRE AND POKE 'EM CLEAR — THEN A SHOT OF LOW-PRESSURE AIR.

CLEANING YOUR BATTERY

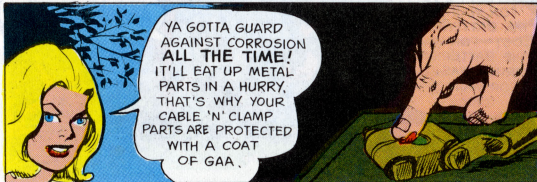
USE A SOLUTION OF BAKING SODA $\frac{1}{2}$ -LB TO 1 GAL WATER

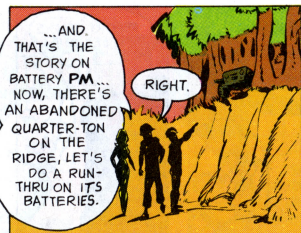
BE CAREFUL TO KEEP THIS STUFF OUT OF VENT HOLES!



RINSE WITH CLEAN WATER AND DRY WITH A CLEAN RAG

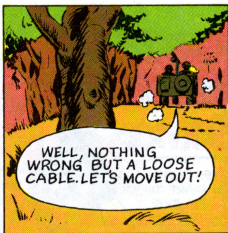
YA GOTTA GUARD AGAINST CORROSION ALL THE TIME! IT'LL EAT UP METAL PARTS IN A HURRY. THAT'S WHY YOUR CABLE 'N' CLAMP PARTS ARE PROTECTED WITH A COAT OF GAA.



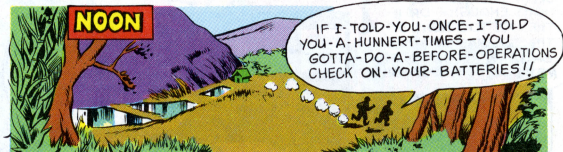


...AND THAT'S THE STORY ON BATTERY PM... NOW, THERE'S AN ABANDONED QUARTER-TON ON THE RIDGE, LET'S DO A RUN-THRU ON ITS BATTERIES.

RIGHT.



WELL, NOTHING WRONG BUT A LOOSE CABLE. LET'S MOVE OUT!



NOON

IF I TOLD YOU ONCE - I TOLD YOU - A HUNNERT-TIMES - YOU GOTTA DO-A-BEFORE-OPERATIONS CHECK ON-YOUR-BATTERIES!!



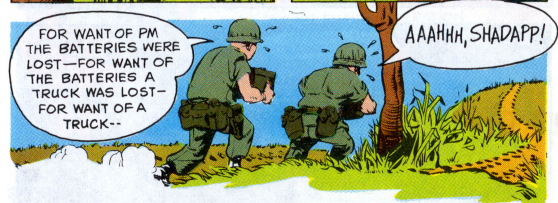
A 25-KLICK HIKE TO PICK UP NEW BATTERIES - JUST BECAUSE YOU GOOFED...

HEY!!! OUR TRUCK AIN'T HERE... GONE!!



YOU'RE OUTTA YOUR COTTON PICKIN' MIND, GEORGE!! WE LEFT IT RIGHT HERE.

IT'S GONE! GONE! GONE!



FOR WANT OF PM THE BATTERIES WERE LOST - FOR WANT OF THE BATTERIES A TRUCK WAS LOST - FOR WANT OF A TRUCK--

AAAAHHH, SHADAPP!

AIR MOBILITY

**NO MORE
DUNKING**

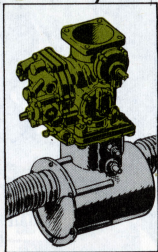
If you've ever submerged a Seminole (U-8) carburetor in a pail of gasoline to condition the fuel diaphragms—cease and desist! !

Sure, dunking will restore the fuel diaphragms to a flexible condition so that you can get a stable idle adjustment after a carburetor change.

But dunking will also wash the vinyl coating from the air diaphragms which will cause them to dry out. Then the carburetor metering is thrown out-of-whack and the diaphragm goes to pot before it should.

THE SOLUTION!

Put on the new carburetor. Then soak only the fuel diaphragms by mov-



**INSTALL
THE
CARB
FIRST —
THEN
SOAK
DIAPHRAGM**

ing the throttle and mixture controls.

Use the new 2-hr carburetor soaking deal in para 5-177 of Ch 1 (29 May 69) to TM 55-1510-201-20.

GET HIGH TEMP TYPE

There's no need for you HueyCobra mechs to strain your peepers looking for the high-temp packing ring called for in para 6-30 of TM 55-1520-221-20 (Apr 69). The hydraulic module filter element gets O-ring, MS28775-212, FSN 5330-579-8156.

HUEY

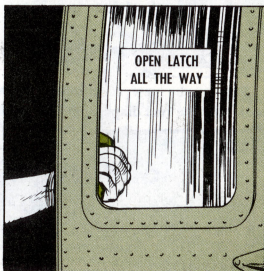


You're going to get normal wear on bird parts and the cargo doors are no exception. It's PM to the rescue.

When the slider insert wears to a point where you're about to get metal-to-metal contact between the slider and the door track it's time for a switch.

Unlock the cargo door by going all the way with the latch handle. The latch pins have to be out of the receptacle or they'll wear a groove in the door frame.

Remove the door stops in the door tracks at the aft end of the fuselage.



HUEY

PM ROUND-UP



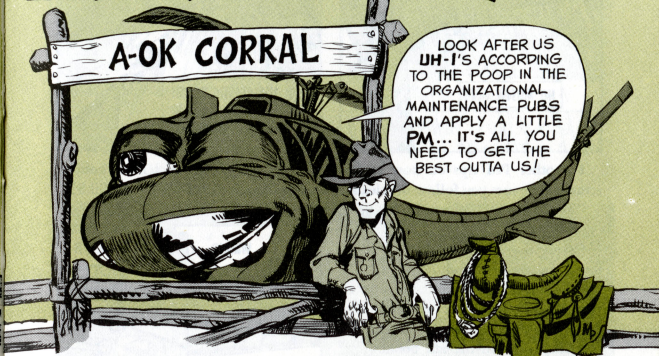
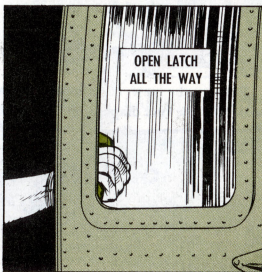
ROTATE THE SLIDER

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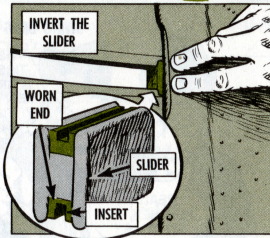
Remove the door stops in the door tracks at the aft end of the fuselage.



Move the door aft to expose the slider. The bottom part of the insert rides on the lower track and wears—the top part just acts as a guide and doesn't wear.

When you see that the unworn insert is in good condition, rotate the slider 180 degrees so you wear the other insert.

Move the door forward, put the door stops back and you've saved yourself a part replacement.



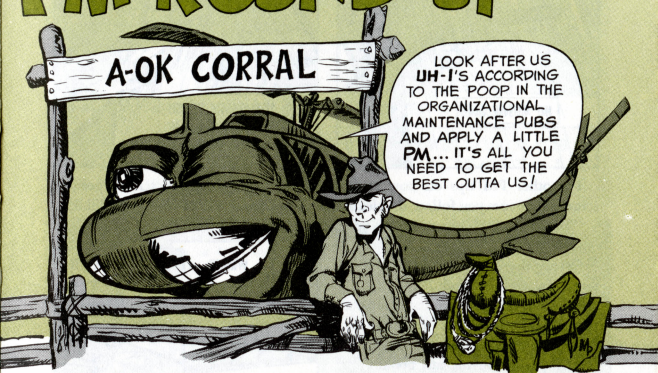
SEE MILES AND MILES

Looking thru scratched plexiglass can drive a pilot to distraction. Flying formation or maneuvering close to the ground calls for the best visibility a pilot can get, lest some bird parts get bent up.

So, whenever you want to adjust the pilot's door window never reach for the handle without first loosening the window stop...scratches the plastic something fierce!!



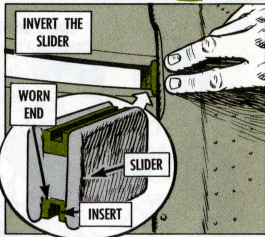
PM ROUND-UP



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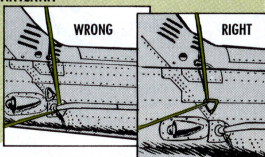
Using muscle on the window handle with the stop locked can even break the handle off the window.



For other PM tips on how to keep bird transparent plastics from getting scratched be sure you follow the cleaning info in Chap 1 of TM 55-405-3 (Jul 66).

SAVE THE ANTENNA

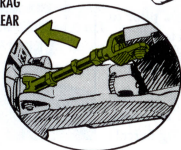
Saving the AN/ARC-30 OMNI antenna from wear and damage is "a must". Never secure the main rotor by running the tiedown straps thru the antenna and then around the stinger. Tie the straps around the tail boom.



SWING DRAG BRACE ASIDE



SWING DRAG BRACE CLEAR



Stay loose when you're working up a sweat on your bird. This goes double on a main rotor blade change.

Follow the poop in Chap 8 of the Huey organizational maintenance pub. In addition, before you insert the blade into the grip, make sure you swing the drag brace out of the way so you don't spear the new blade.

'Tis mighty embarrassing if you have to send a new blade to the repair shop.

PULL BLADE PM

Those main rotor blades really cut the mustard. But they definitely need attention if you expect them to go the full retirement route.

No matter where you operate—every 25 hours or weekly, whichever comes first—give 'em the full treatment.

Wipe the blades with aliphatic naphtha, TT-N-95. FSN 6810-238-8119 will get you a 1-gal can. You can also use dry cleaning solvent, PD-680, Type I. FSN 6850-264-9038 will get you a 5-gal pail.

Follow up with a mild soap detergent wash.

Rinse those babies thoroughly with plain cold water and dry them with clean cloths.



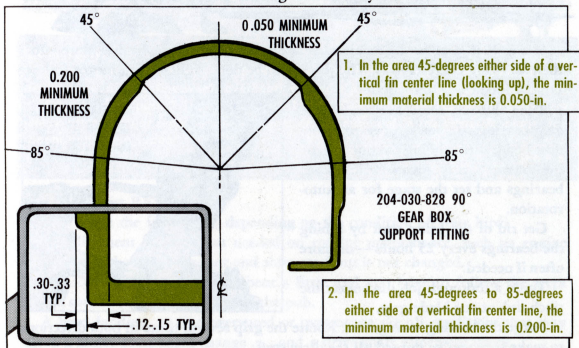
TRY THIS CHAFING FIX



When it comes to pulling the PM Daily, Intermediate and Periodic, the eyes have it. Look for any chafing which would clue you that maybe some studs or nuts have not been torqued or some area needs beefing up.

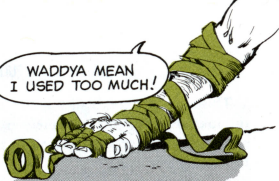
One place you're likely to get chafing is on the 90-degree gear box support casting, P/N 204-030-828.

Don't let it throw you. You can build up the casting by filling in the chafed area with Metal Set A4. The chafing can't be beyond these limits.



To guard against future chafing put a strip of anti-chafing tape, P/N 549, FSN 8135-923-0591 (1 roll) on the forward upper edge of the casting where the drive shaft cover makes contact with the casting. That'll do the trick.

WADDYA MEAN
I USED TOO MUCH!



CHECK OUT LEAKS

When you pull your PM, look for grease leakage because it can mean some part is heating up from friction and is about to crumble.

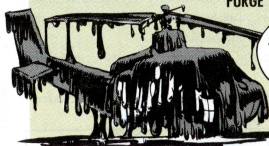
A shot tail-rotor drive-shaft-coupling seal, for example, can drain a coupling . . . no lubrication. When this happens the internal splines of the female coupling half will be stripped by the external splines of the male half, in short order . . . like in a matter of minutes.

So, if you notice a grease leak check it out, pronto.

GREASE
LEAKING?



PURGE THE DIRTY GREASE



YOU SURE
YOU FOLLOWED
THE LUBE
CHART?

MORE
OR
LESS...
WHY?



Seeing that your bird gets an adequate diet of clean grease takes more effort than servicing oil reservoirs. The job has to be done right, which means following the lube chart to the letter.

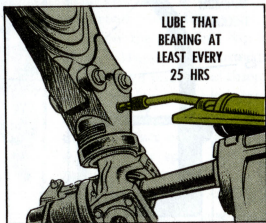
Take the tail rotor hub and blade grip bearings. If you're operating in a dust bowl, dirt is going to contaminate the grease. Gritty grease will scratch bearings and set the stage for an auto-rotation.

Get rid of the gritty stuff by lubing the bearings every 25 hours—or more often if needed.

To do a thorough job disconnect the pitch link at one blade grip.

Purge the bearing with grease. Rotate the grip several times in both directions to make sure you've purged all the dirty stuff.

LUBE THAT
BEARING AT
LEAST EVERY
25 HRS



Purge again and wipe off the excess grease.

Reconnect the pitch link.

Disconnect the pitch link on the other blade and make with the grease gun in the same manner as on the first bearing.

Reconnect the pitch link—you've done it up brown.

Yessir-e-e, maintaining your new charge is a challenge. Stick by the pubs and pull your PM regularly and you'll be a veteran crew chief in short order.



WHAT'S MY CONDITION?



Dear Windy,

I can see where a Huey (UH-1D/H) main drive shaft alinement check is needed because of coupling spline wear, overheating—or a belief that the shaft is out-of-line.

But why does para 7-18a(2) of TM 55-1520-210-20 (May 69) call for an alinement check after a major repair or replacement of a component in the center fuselage, tail boom and pylon support?

SP6 P.S.

Dear Specialist P.S.,

You make the inspection, depending on the condition of your bird!

An alinement check is not needed on routine maintenance, such an engine change—if the engine mount and shim stack-up is not changed.

But sometimes bird parts get bent a little and you have to follow the steps in the special inspection section of the pub.

A hard landing, engine overspeed or overtorque are all conditions that may mean a major component change . . . and a drive shaft alinement check.

"NO CHAFING, SEE?"



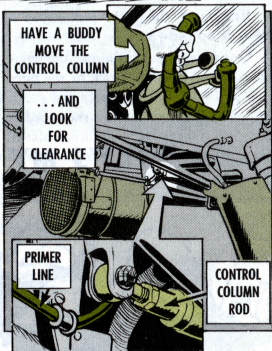
You eager-beaver mechs better have a look at the U-6A primer line, where it's clamped to a bracket on the oil cooler.

Maybe the clearance between the line and control column rod is not what it ought to be?

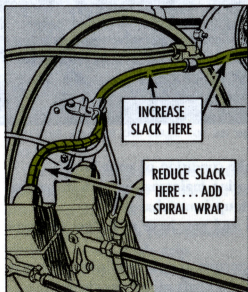
If there's contact, a chafed line could rupture and spray fuel on the engine when the primer is used . . . what a revoltin' development!

So, have your buddy move the control column thru full travel while you eye the clearance as the control rod moves past the primer line.

Re-position the line if there's a possibility it may be chafed by the rod.



NO LACK OF SLACK



The next time you open up the engine cowling on your Chinook (CH-47C) focus in on the N1 control wiring harness.

Seems that if you have beaucoup slack in the connector area you'll get a chafed line which, in time, can upset the appletart.

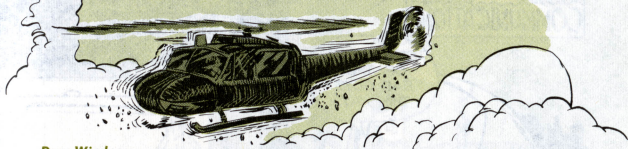
So . . . reduce the slack at the connector and increase the slack between the upstream clamping.

While you're at it, latch on to some spiral wrap, P/N 900628-4, FSN 9330-836-8493.

Put a piece of wrap on the harness, between the actuator connector and the first breakout point.

That'll stop the harness chafing.

CHECK FOR VIBRATION!



Dear Windy,

A T-53 engine vibration check is made after removing a major rotating part, such as the hot-end, and if you suspect excessive engine vibration.

But, my buddy and I have been going 'round and 'round on whether an engine vibration check is pulled after a Huey engine change.

I say you don't need one. Who's right, Windy?

CW4 R.L.R.

Dear Mr. R.L.R.

It's true that the engine post installation inspection on page 3-18 of TM 55-1520-210-20 (7 May 69) does not include an engine vibration check.

However, the pub is being revised to add the inspection to make sure the engine was put in right. A misaligned engine will give you vibration.

TM 55-1520-210-35-1 (7 May 69) para 5-65 and TB 55-2800-200-30/1 (20 Jan 69) para 28, both call for the vibration test after an engine change.

Windy



NO SQUATTERS, PLEASE!

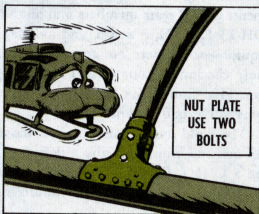
To keep your baby from getting middle-age spread, forget any improvements to the undercarriage.

Seems that some types have used a single thru bolt on the Huey (UH-1) landing gear skid cross tubes instead of 2 bolts and nut plates.

'Course, a single bolt won't carry the big load the 2 bolts will carry . . . could make a squatter out of your bird.

Over-tightening of a thru bolt can also buckle and crack the cross tube and sideline your bird from the fracas.

Keep your baby slim and trim. When you change a cross tube or a loose bolt be sure you use the hardware listed in the bird parts pub.



COMMUNICATIONS



D'ja ever wanna beat your friendly CMMI avionics inspector at his own game?

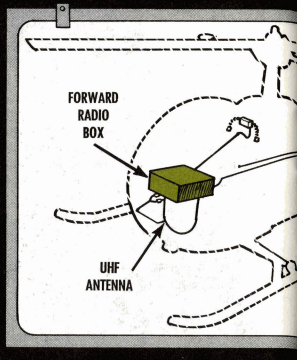
You got the chance, right now.

Following are repeated deficiencies, shortcomings and suggested improvements CMMI team members find on the OH-13 E, G, H, S and T and avionics equipment. Correct 'em and you'll not only checkmate your CMMI man, but you give your Sioux some No. 1 type preventive maintenance.

The bold type items are the most serious and would get you a deficiency on a CMMI. Others would rate you a shortcoming or a suggested improvement.

So, crew chiefs, aircraft mechanics, avionics repairmen (and inspectors?), away we go.

BE YOUR OWN INSPECTOR ... FLY RIGHT... OH-13 AVION



WHIP cracked, broken, frayed or weathered, loose in ferrule (if so, replace the whip).

COUPLER mounting screws loose.



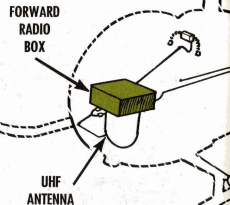
Excess **COAX CABLE** not securely taped and string-tied (taped to frame with 3 wraps of electrical tape and string tied with waxed linen or nylon, allowing 1/4-in string ends. Use a clove hitch and a square knot).

COMMUNICATIONS

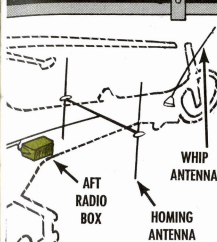
STAY AHEAD OF THE BAD GUYS THIS WAY!



BE YOUR OWN INSPECTOR... FLY RIGHT... OH-13 AVION



WITH NO.1 ICS GEAR



SENSATIONAL...
PERFECT... CLEAN AS
A HOUNDS TOOTH... MAN
HOW'D YOU' GET SO
SHARP.



D'ja ever wanna beat your friendly CMMI avionics inspector at his own game?

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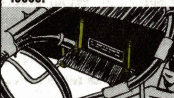
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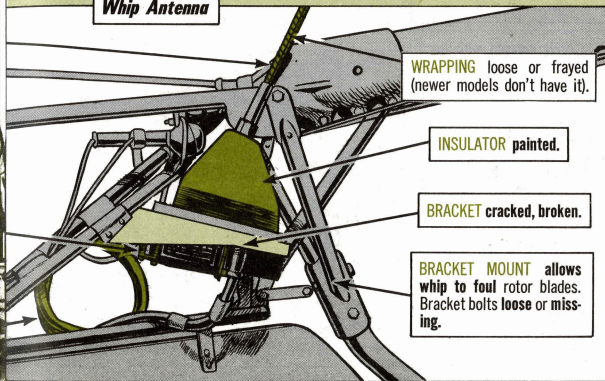
WHIP cracked, broken, frayed or weathered, loose in ferrule (if so, replace the whip).

COUPLER mounting screws loose.



Excess **COAX CABLE** not securely taped and string-tied (taped to frame with 3 wraps of electrical tape and string tied with waxed linen or nylon, allowing 1/4-in string ends. Use a clove hitch and a square knot).

Whip Antenna



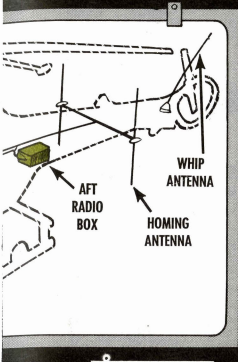
WRAPPING loose or frayed (newer models don't have it).

INSULATOR painted.

BRACKET cracked, broken.

BRACKET MOUNT allows whip to foul rotor blades. Bracket bolts loose or missing.

WITH NO.1 ICS GEAR



Whip Antenna

SENSATIONAL...
PERFECT... CLEAN AS
A HOUNDS TOOTH... MAN
HOW'D YOU GET SO
SHARP.



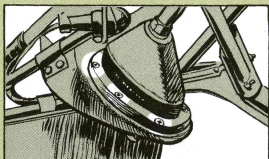
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BRACKET cracked, broken.

BRACKET MOUNT allows
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Bracket bolts loose or miss-
ing.

(more) Whip Antenna



BASE SCREWS missing,
loose, wrong size.



BASE NUT or SETSCREW
loose (seal setscrew with
glyptal or loctite).



Aft Radio Box

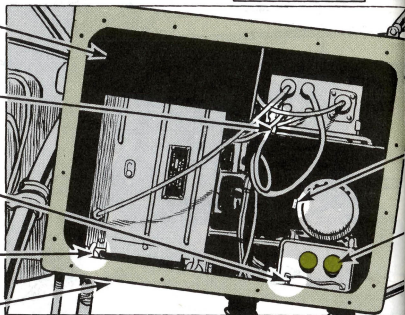
SCREEN clogged with debris,
dzus springs broken.
Grease or dirt in box,

CABLE CLAMP loose or
restricts receiver-transmitter
movement on shockmount.

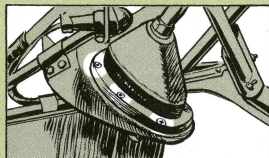
MOUNTING BOLTS or
CLAMPS loose.

MOUNT THUMB NUTS
not safety wired.

AIR FILTER dirty.



(more) Whip Antenna



BASE SCREWS missing, loose, wrong size.

BASE NUT or **SETSCREW** loose (seal setscrew with glyptal or loctite).



Aft Radio Box

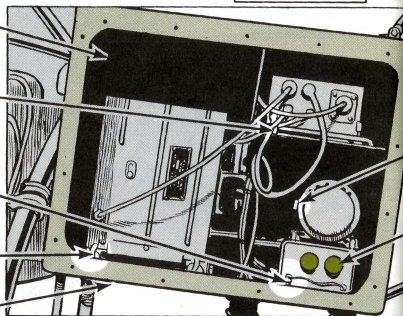
SCREEN clogged with debris, dzus springs broken. Grease or dirt in box,

CABLE CLAMP loose or restricts receiver-transmitter movement on shockmount.

MOUNTING BOLTS or **CLAMPS** loose.

MOUNT THUMB NUTS not safety wired.

AIR FILTER dirty.



Forward Radio Box

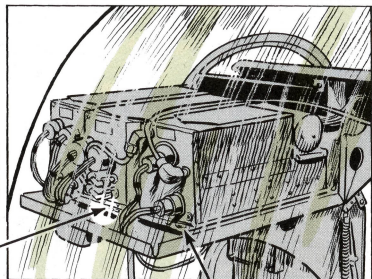


CONNECTOR not safety wired.

CONNECTOR NUTS loose.

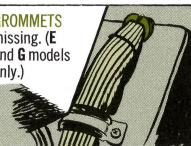
BONDING STRAP broken, missing, loose.

SHOCK MOUNT dead, units restrict shock mount action or can bang together, screw loose, missing, wrong size.

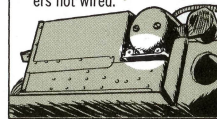


RADIO SLIDE FASTENERS broken, loose, missing (safety wire not needed).

GROMMETS missing. (E and G models only.)



DYNAMOTOR slide fasteners not wired.



R-T MOUNT BOLTS and **CABLE CONNECTORS** not safetied.

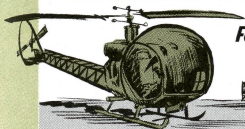
BRUSH CAP broken, missing, loose.

FUSES Wrong (must be 1/2-amp, normal blow).

COMPONENT MOUNT BOLTS not safetied; ground strap broken, missing, loose; mount binds or has loose screws; electrical connectors under box are not safetied.



Forward Radio Box

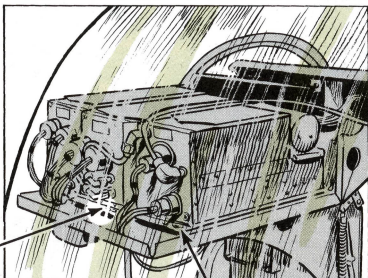


CONNECTOR not safety wired.

CONNECTOR NUTS loose.

BONDING STRAP broken, missing, loose.

SHOCK MOUNT dead, units restrict shock mount action or can bang together, screw loose, missing, wrong size.



RADIO SLIDE FASTENERS broken, loose, missing (safety wire not needed).

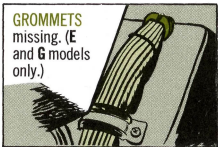
R-T MOUNT BOLTS and **CABLE CONNECTORS** not safetied.

BRUSH CAP broken, missing, loose.

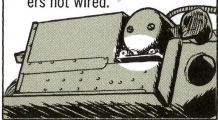
FUSES Wrong (must be 1/2-amp, normal blow).

COMPONENT MOUNT BOLTS not safetied; ground strap broken, missing, loose; mount binds or has loose screws; electrical connectors under box are not safetied.

GROMMETS missing. (E and G models only.)

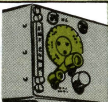


DYNAMOTOR slide fasteners not wired.



Instrument Panel

TUNING SHAFT misaligned (index mark above dial must align with white dot on right end of dial scale when crank is rotated full counterclockwise); crank binds; dzus fastener loose.



DIMMER SWITCH binds, loose knob.



CONTROL HANDLE butterfly switch broken, binds.



WELL, BLACKBELT, YOU DID IT AGAIN!

I DON'T KNOW MY OWN STRENT!

HARNESS fouls rudder controls.



SWITCHES broken, knob missing.



CHANNELIZATION CARD missing, incorrect, not readable.



PANEL MARKING or **LETTERING** missing, not readable.



CIRCUIT BREAKER Wrong (AN/ARC-60 and ARC-44 take 10-amp; ARA-31 takes 5).



Headset Cords

CONNECTOR broken.

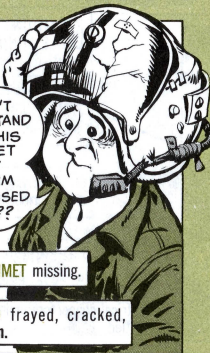
CLAMP SCREW loose; rubber insert missing.



I CAN'T UNDERSTAND WHY THIS HEADSET DON'T PERFORM LIKE IT USED TO!!!

GROMMET missing.

CORD frayed, cracked, broken.



Homing Antenna

ANTENNA cracked, broken, frayed, eroded, loose in ferrule, out of line with lower section, not vertical, loose in ferrule.

WRAPPING loose or frayed (not on newer antennas).

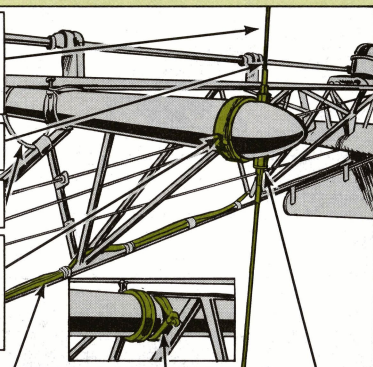
GROUND WIRE missing, clamp loose.

COUPLER painted, screws not safetied, filister head screws missing or not temporarily replaced with lock-washers under substitute screwheads.

COAX CABLES not taped and tied to frame (see whip coax).

TUBE not double clamped, bolt loose, grommet missing.

BASE SETSCREW loose, missing, not sealed.



UHF Antenna

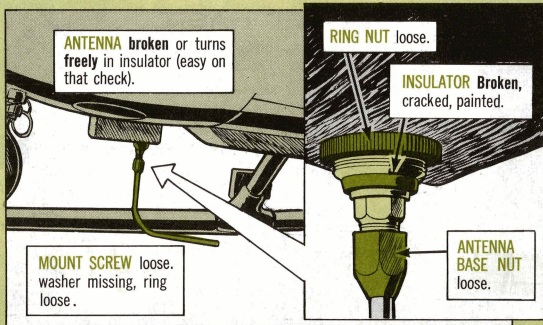
ANTENNA broken or turns freely in insulator (easy on that check).

MOUNT SCREW loose. washer missing, ring loose.

RING NUT loose.

INSULATOR Broken, cracked, painted.

ANTENNA BASE NUT loose.



IS THAT CRYSTAL CLEAR?

I'M
KEEPING
THESE...
THEY'RE
HARD TO
COME
BY!



BE SURE
THEY'RE NOT
BASIC
ISSUE.



Next time you're about to turn in your AN/ARC-45 radio set to support for repair, give it a quick check to be sure you're not turning in some special frequency crystals.

Your set's basic issue items list calls for the following crystals: 236.0 MHz, 241.0, 243.0, 255.0, 257.0, 272.0, 275.0, 301.0, 344.0 and 348.0.

If you've got some frequencies other than those, hold onto 'em when you turn in your set . . . because the replacement you get is gonna have only the **BIIL** crystals in it.

Naturally, that'll leave you scratching for the crystals you really need.

HEEDLESS HELMET HABIT

Sit right down, Mac. Take that CVC helmet off and sit right down . . .

BESIDE it, beside it, Mac—not **ON** it!

You could warp the helmet over the earphone area, just by using it for a campstool. You can even damage the outside earphone mechanism . . . or the mouthpiece.

And the sad fact is, once that fiberglass shell is warped outta commission, it's not much good for anything but salvage.

So, any time you think about sitting on your CVC helmet, the best way to do it is: **Don't.**

HEY-!
GET OFF
MAN!



ONE COOL RT

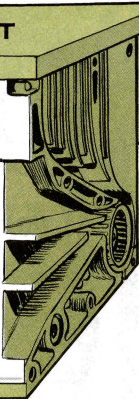
Wouldja' believe that taking the side panels off your AN/VRC-12 series receiver-transmitters won't help it keep cool?

Running the RT-246 or RT-524 with the panels off will burn out the transistor banks.

The moral: keep the panels on. They force the blower air through the vanes and to the parts that need 'em . . . including the transistors. The "panel on" bit applies even when you're troubleshooting the RT.

Naturally, if the blower stops, shut down the RT and send it off to your support.

A final "hot" note: Don't key your transmitter without an antenna load (antenna or dummy connected, that is). Firing it up without a load can burn out your K301 relay or the V6201 PA tube.



BAG THAT BATTERY

In the package or out, dry batteries like those for portable radio sets should keep their raincoats on until they're used . . . and even longer.

F'rinstance, batteries like the BA-386/PRC-25 and BA-4386/PRC-25 are sealed with plastic moisture barriers (that's a bag, man) and then stuffed in cardboard boxes. Like the name says, the bag keeps out moisture and should stay on the battery until it's ready for use.

Batteries like the BA-399/U, for the AN/PRT-4 squad radio transmitter, are individually sealed, and there's enough room in the battery case for a bonus . . . you can keep the plastic bag on when you shove the battery home. The pins will puncture the plastic.



COMBAT
SUPPORT/
EQUIPMENT

TREEDOZING
GOT YOU
STUMPED? ...

7 SE

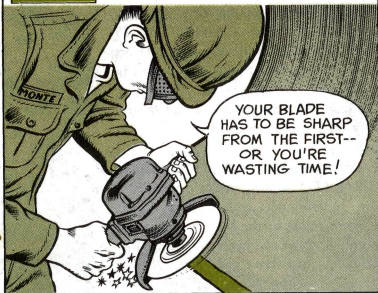
A TREEDOZER
BY ANY OTHER NAME
ROME PLOW,
F'RINSTANCE,
WOULD BE GREAT
WITH THE RIGHT KIND
OF TREATMENT.
SO, HERE ARE 7
SECRETS FOR YOU
LANDCLEARING
TYPES!



SECRET

1

**NO SUBSTITUTE FOR
A SHARP BLADE**

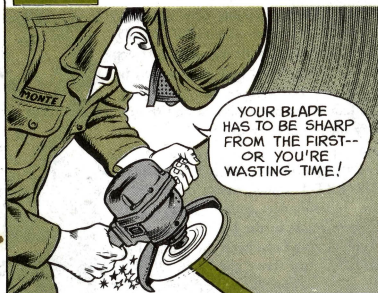


YOUR BLADE
HAS TO BE SHARP
FROM THE FIRST--
OR YOU'RE
WASTING TIME!

TREEDOZER
GOT YOU
STUMPED?...

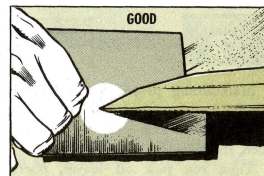
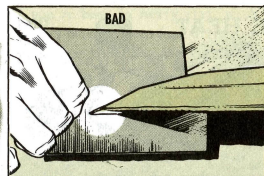
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SECRETS FOR YOU
LANDCLEARING
TYPES!

**SECRET 1 NO SUBSTITUTE FOR
A SHARP BLADE**



7 SECRETS OF SUCCESS

Hook up that rotary pneumatic grinder to 90 or 100 lbs worth of air compressor and get with it. Cut as near 28° on the slicing edge as you can. Check your angle and thickness with a template like this



Grind off burrs on the bottom after you shape the top. Whichever side you're working on, keep a solid support under the blade. Wear goggles when grinding.

When you get done, the underside must be flat. A curve up to the point is strictly No. 10.

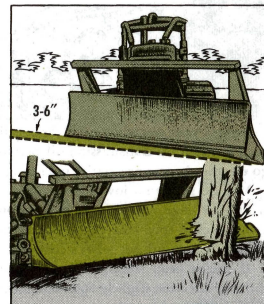
SECRET 2

**KEEP BLADE CLOSE
TO GROUND**

Like you'd keep your head down in a fire fight, ride that blade down low when you work. But how low?

Rig so the stinger just floats on the ground, but doesn't dig in. Carry that right-side trailing edge 3 to 6 inches off the ground, no more. Change that only when (1) you raise the blade to go to or from work or to back up; (2) when you have to chip on a large tree with the stinger and web; or (3) when you have to grub out large roots.

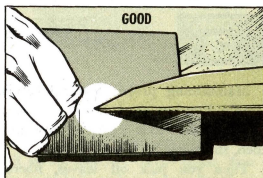
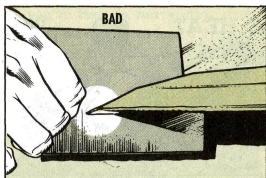
That blade, it helps keep large trees off your head, because that's how to lay 'em ahead and to the right.



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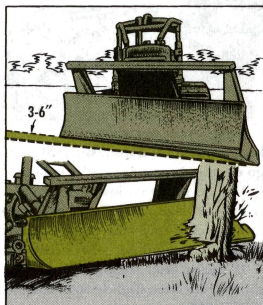
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That blade, it helps keep large trees off your head, because that's how to lay 'em ahead and to the right.



When you do have to grub — though a bull blade's lots better — take it easy. Slowly stab the trunk or the buried root with the stinger, then crowd on power. Whamming a tree with speed on is about like putting a land mine inside your belly pan — track roller frames, ring gears, trunnions, and crankshafts smash up. The secret is chipping away, not trying to take the whole trunk all at once.

Better still, it helps keep you from running over big stumps. Some guys have had big stumps roll under 'em, raise blade and whole front up in the air — then drop ka-thud right across the crankcase pan guard.

SECRET 3

Maintaining proper water level is simple. You just check it every 2 hours on your at-halt look-see. Every now and then, sharp-eye oil level.

Then you pick off leaves, fibers, grass, sticks and such on radiator faces and engine side screens.

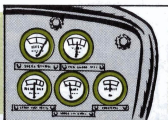
Once every shift, blow out radiator fins front and rear with compressed air. Clean behind the radiator guard screens, top and bottom.

BEAT THE HEAT



SECRET 4

WATCH YOUR GAGES

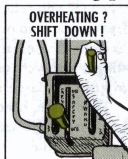


THESE GAGES TELL YOU IF YOUR PLOW GETS UNHAPPY.

Eyeball your transmission oil and radiator temperature gages close like — and keep a watch on transmission oil pressure. If pressure drops and the heat gages go up, the chances are you're operating in too high a gear.

You do shift to a lower gear right then, but you keep on with your gage-watching. If things don't steady down right away, pick a spot where you can idle down and stop completely. Then find out what's cooking.

If you've been rolling a load in front of you, unload by shifting direction slightly right and left, but quickly. Literally shake your troubles off.



DO YOUR HOUSEKEEPING

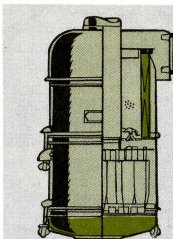
Lubricating oil, hydraulic oil, air, and fuel have to be clean, really clean.

You're the only one who can keep 'em so. So clean those filters.

Another place is that crankcase guard plate. It has to be free from rock, mud, and crud, or your oil will boil. If you can't wash it with water successfully, get support to drop it and scrape it clean.

If you've been in heavy clay, wash out with a hose between final drive ring and sprocket. Otherwise, heat can bake that clay to brick.

SECRET
5



KEEP
CLEAN!

SECRET
6

GUARD YOUR OWN

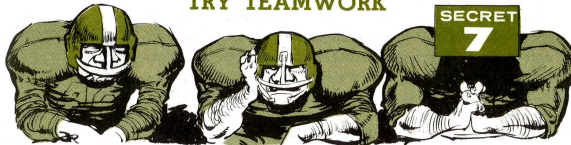


WEAR
GOGGLES!

You get an air grinder of your own, to have and to hold. Take care of it; don't let it get far away or out of reach. You may have to use it even oftener than the once-daily SOP. You may have to grub roots in rocky ground, f'rinstance.

You have a track-adjusting grease gun around—or on the contact truck if that's your unit SOP. If you don't take care of track tension, no one else will.

TRY TEAMWORK



SECRET
7

You may have heard that so much you're sick of it. But you can't beat it. You need a thumbnail time-table and some signals.

You club up with a couple other operators, or maybe more. One team does the lubing on all the club's rigs, another fuels, another team the cleanouts, and you gang up to sharpen up. Your maintenance honcho can quarterback.

Then more'n one pair of eyes will see each rig, and more small troubles found before they're big.

That's real PM.



NOT HOT AIR... COMPRESSORS

Agreed . . . mechanics keep the Army running.

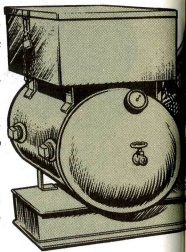
Whether it's 21A10's or 31B20's, 67A10, 63A to Z—missile or marine, armament or automotive, electronic or engineer—the man with the wrench MOS and know-how is the one they all turn to—PM-wise and repair-wise—.

That's you, Knight of the Knotty Knuckles. It's a busy business—

So much so that you might even overlook your own PM. It's easy to get so wrapped up in shoving equipment back to users that you forget yourself and your own tools.

Like that air compressor in your shop, f'rinstance.

To tell the truth, compressors get neglected about as much as anything else you could name . . . like mechanics' personal cars.



HE'S THE BEST MECHANIC IN THE ARMY, TAKES NUMBER ONE CARE OF EVERYONE'S GEAR--BUT HIS OWN.

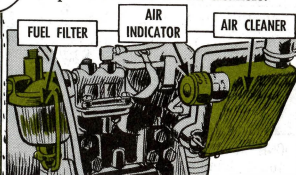
MY GEAR?
WOTTA YA MEAN...
...OH I SEE.

KNIGHT OF
THE
KNOTTY KNUCKLES

FORSOOTH!
I DIGGETH
HER MUCH!

HORRAY FOR
SIR KNUCKLE!

Heat and dirt are always a threat to small powerplants. Your LO calls for an oil-level check at least every 5 hours. That'll give you a chance to make sure the oil level is up and to check the air cleaners.



The time to change air filter cores, is right when you see the red strip in your air-restriction indicator . . . not a little later, or after lunch, or when you get to it. Otherwise, you heat your engine up worse, carbon it up faster, and lose power quick-like.

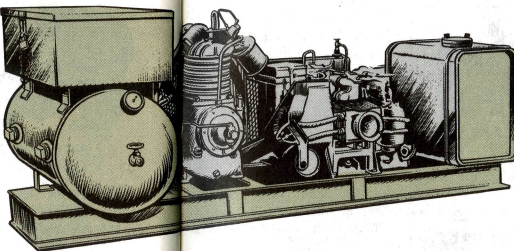
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TRIP THE TRAP

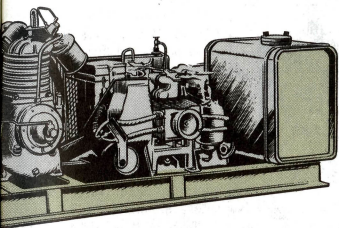
You could let a CMMI or a rough rush of work catch you with a compressor on the blink—but you needn't.

Mox nix whether it's a one-lung or 2-cylinder, old Ord issue, made from can-yard leftovers, or brand new, these wheelbarrow-style rigs have common problems.

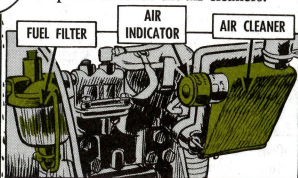
You can help yourself by being sure just what it is you have. Placing a possessive paw on the right TM for any piece of equipment is a fine first step.



NEED CARE



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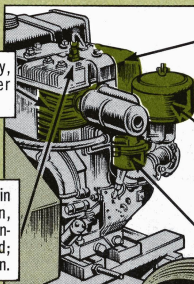
You can help yourself by being sure just what it is you have. Placing a possessive paw on the right TM for any piece of equipment is a fine first step.

LIKE ON ENGINES—

But on any type, purple pencil people peek for poop like this, because here's how you get breakdowns:

COOLING FINS—Dirty, broken, foreign matter blocking off air.

IGNITION—Switch loose in mount, handle broken, won't work; wires or connections loose, frayed; spark plugs loose, broken.



COWLING, CASE—Bolts loose, covers bent, brackets damaged.

AIR CLEANER—Hoses loose, cracked; cover loose. Dry-core filter choked or blocked; grit covering sump bottom in oil bath.

FUEL SYSTEM—Filter clogged, bowl dirty; lines loose, dripping, crimped; carburetor dirty, loose parts missing.

That's just once-over, sure. But it'll give you an idea whether your outfit is ailing on the go-end. If it is, call your sergeant, tell him you've got an in-house-must and get with it.

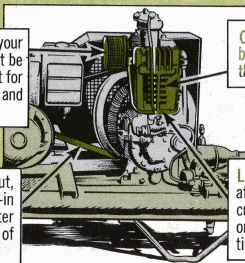
If nothing's out of whack too much there, though, you can go on to

... THE COMPRESSORS

That's your air-cramming end. Eyeball:

AIR MUFFLER—Like your engine air cleaner, must be free-breathing. Look out for holes in the screen and mount.

DRIVE BELTS—Frayed, cut, too loose or too tight ($\frac{3}{4}$ -in to 1-in deflection in center is correct); pulleys out of line.



COOLING FINS—Have to be clean and healthy like those on engine.

LINES—Intercooler or aftercooler loose, crimped cutting against belt guard or frame. Nuts or connections loose, broken.

So far, so good? Then it's time for you to . . .



LISTEN UP.
HERE'RE A FEW
OIL CHECKING
TIPS!

REALLY LISTEN

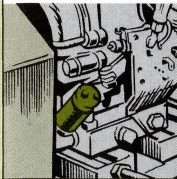


Maybe you've operated this rig every day of the week you've been in Beautiful Youknowwhere, but never really paid any attention to the way it runs.

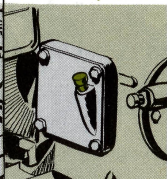
Could be you don't even know how to check the oil—because somebody else has always lubed it.

Make this time different. Use the TM if it'll help, and—

You check crankcase oil.



You check compressor oil.



You see if the relief valve will work . . . you may be surprised. Here you'd been thinking all along that you had a safety, and you hadn't . . . or had you?

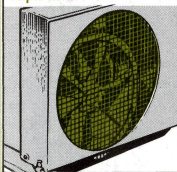


Another check you can take care of right then is your tank drain. If water's inside, let it out . . . if the drain works. If it won't work, fix. Then bend an eye to the starter rope and pulley. A good rope in a healthy pulley, one with no gouges or cuts in the faces or loose keybolts is what you need.

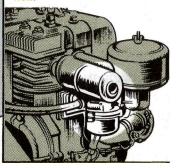
Scan the choke lever while you get set to start. Be sure it works smoothly, and opens easily when you've yanked the start rope and got going.

Now's when you use the ears, your ears. Listen for backfires, uneven operation after warmup, squeaks, rattles.

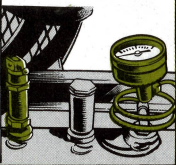
Especially see if the drive belt cage is chafing and cutting any output lines.



Check for fuel drip, smoky exhaust, and excessive vibration.



Now look at the pressure gage. Before you close the relief valve, it should say Empty . . . or is it stuck?



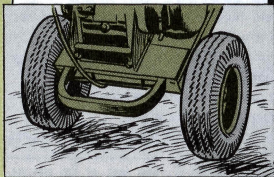
Close the relief valve, and see if the pressure gage builds up like it should.

Get that done, and you're pretty well through with your running check. You've even taken care of most of your Q service inspection points.



YES... EXCEPT
FOR THESE LAST
COUPLE OF
POINTS!

WHEELS — Tires cut, pressure low (25 PSI is right for most of these rigs) rims bent, parts loose or missing.



FIRE EXTINGUISHER (if issued) — Not handy, seal broken, discharged, missing (should not be mounted right on equipment, but kept close by).

LOGBOOK, PUBS — Missing, out of date.

At this point, you needn't fear the salvage yard so . . . In fact, there's a bonus.

THE EXTRAS

Keep in mind that these rigs weren't meant to be substitutes for heavy engineer-type compressors on pneumatic tools. For such big jobs, get an outfit heavy-duty enough to put out lots of air without gasping. These shop compressors are great in the spots they're meant to fill — blowing dirt out of radiator cores or filter elements, airing up tires, running plug cleaners, and so on. Just don't ask too much of 'em too fast.

WHY THE
HEAVY
READING?

HOW LONG CAN YOU STAY LUCKY?...
THESE NEW AIR-COOLED ENGINES NEED
KNOW-HOW! SO, HERE'S A LIST TO HELP
YOU WITH SOME ENGINES YOU MAY HAVE!



MODEL	ENGINE TM	COMPRESSOR TM
Kellogg G311-PC	5-2805-256-14	5-4310-276-15
Harris 3MV	5-2805-257-14	5-4310-228-15
Champion LP-512, LP-512-ENG-1	5-2805-256-14	5-4310-241-15
Champion LP-832's	5-2805-257-14	5-4310-242-15
Kellogg G-321-PB	5-2805-257-14	5-4310-245-15

Also real useful are the TM 5-2805-258 series and -259 series, and TM 5-2805-213-14 and 24P. Bear in mind, on Mil-Standard powered units, engine manuals are one thing, and end-item manuals something else. You can't always be sure the engine you have on the end item, or the compressor you get, match the original issue. You might get a Harris 3MV with a -III engine, or a Champion LP-832 with such power. Don't let that throw you. With the new engine TM and the compressor TM, you have all the answers.

You should, in case of such switches, check your PLL to be sure your stock covers the compressor and engine that you really use, not just the one you were supposed to get. It's nice to have parts that fit.

NEED INDEX OR PS?



Indexes covering the following PS Magazines are available: 176-181, 182-187, 188-193, 194-199. Only these PS Magazines are available: PS 182 thru 184, 186, and 190 thru this issue. Drop a line to Sgt Half-Mast, PS Magazine, Fort Knox, Ky. 40121.



WATER
BOY!



LISTER BAG FAUCET

No need to turn in that water sterilizing bag, FSN 4610-268-9890, because of a leaky or broken faucet. You can order faucet, FSN 4510-277-9569, using RIC S9C.

SAVE THOSE HEATERS



Hold one! Before you turn in your immersion heater, FSN 4540-266-6835 or FSN 4540-453-9146, take another look at it. Maybe it still can be used.

You can operate those heaters with small holes or cracks in the partition or baffle and it's not considered a safety hazard.

But if it takes too much time to heat the water because of the holes in the flue partition or the baffle, that's something else. Go ahead and turn 'em in for replacement.

TB 750-971-4 (Oct 69) gives you the word on this.



YOUR DRINKING CAP

Here are a couple of checks for you on the special canteen cap issued with the M17A1 field protective mask.

The cap doesn't work on some of the early production plastic canteens (FSN 8465-889-3744). So best check your drinking cap soonest.

If the cap doesn't thread on easy like, you'll have to swap your canteen for one that does mate right with the cap.

Also, when you're connecting the drinking tube to the canteen, be sure the cap's valve pin is centered. If it isn't

centered use the tube's quick-disconnect plug to gently nudge the pin in place.



Then with an easy-like rotating motion press the tube's plug over the pin. The drinking tube and cap connection must be good and tight . . . otherwise your drinking cap won't work.

Connie's Mini Mini's

I HAVE A
MAINTENANCE
PROBLEM,
CONNIE.



Appendix C

The next Operation Trim on your equipment records is cutting feedback to just the equipment listed in Appendix C of the new edition of TM 38-750 (30 Dec 69). It cuts in half the items reportable on DA 2406, 2407 and the DA 2408-7 usage report, and it's effective 15 Feb 70. The word went out in a DA Letter dated 11 Dec 69. (The new effective date changes the 1 Apr 70 date set previously by DA Msg 931812.)

Fadac Shock

Remember — you have to do it by the numbers when you disconnect the power supply cables on the M18 (FADAC) computer. **First**, put the computer's circuit breaker on OFF. Second, unplug the M18's power cables. If the circuit breaker is not OFF, you'll be shocked when you unplug the cables.

CH-47 Parts

You CH-47B and CH-47C guys can cool down now and find your repair parts in TM 55-1520-209-20P (4 Apr 69) and TM 55-1520-209-35P (4 Apr 69). Just remember that the maintenance words for your B and C models are in the TM 55-1520-227-series pubs. The repair parts music for all models (A, B, C) is in the TM 55-1520-209-series P manuals.

No Plate Changes

Sure, model numbers on lots of generators have been changed from Army to DOD — with new FSN's assigned. But don't go banging on data plates or stamping new FSN's. That's to be done at time of general overhaul at GS or Depot — no lower. You can use a wired-on tag with the new info for convenience if you want. And you don't need to change accountability records.

Heater Caution

M60 and M60A1-Tankers and CEV-crewman:

Remember, the M3 electric heaters, used on the M13A1 Gas Particulate Filter Unit, have their own On-Off Switch. So, everytime you turn off the filter unit, you also have to reach over and turn off the heaters. When you stop the filter unit, you cut off the air flow through the heaters. And, without air flowing through them the heaters'll quickly burn up on you.

Instant Supply

Latch on to DA Pam 350-55-1 and DA Pam 350-55-2 (Aug 69). They're loaded with unit supply-room and PLL know-how. The -1 answers your questions. The -2 illustrates use and maintenance of supply records and forms. They go together, so you need 'em both.

Would You Stake Your Life ^{right now} on
the Condition of Your Equipment?

**HIT THE
BULLSEYE**

**WITH YOUR
EIR**

**COMPONENT
OR
PART NAME**

SERIAL NO.

RESULTS

EIR MEANS
EQUIPMENT **I**MPROVEMENT
RECOMMENDATION.
IT COULD ALSO STAND FOR
EXACT
IDENTIFICATION
RECORDED
ON YOUR
DA FORM 2407.

